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Seabirds in the northwest North Sea

Lady Amherst's Pheasant

Long-tailed Shrike: new to Britain

'Balearic' Woodchat Shrike



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Seabirds at sea in summer in the northwest North Sea

Kees (C. J.) Camphuysen



1. Common Guillemots *Uria aalge*: parent (probably male) and chick, central North Sea, July 1999. *Kees Camphuysen*

ABSTRACT The area off the Scottish east coast and around Orkney and Shetland has previously been identified as the single most important area for seabirds at sea in summer in the North Sea. Both colony studies and long-term observations during extensive surveys off the British east coast have shown that sandeels (Ammodytidae) are critical prey for most piscivorous species in the area, but also that foraging is restricted largely to a zone c. 80 km wide along the coast. This paper summarises the results of ten extensive cruises and reports on species composition, foraging distribution and interannual variations within the northwest North Sea.

Since the late 1970s and early 1980s, seabirds at sea have been studied in the North Sea in a much more systematic way than previously. Computers were essential to process the (literally) millions of bird records obtained during many thousands of kilometres steamed in the area, and enabled complex distribution patterns to be analysed with ease. An early analysis by the European Seabirds at Sea database group (a network of institutes and individuals from all countries around the North Sea which collected data in a standardised way and

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stored the information in a single joint database) revealed species-specific, broad-scale distribution patterns for the entire North Sea area (Skov *et al.* 1995; Stone *et al.* 1995). It was shown that by far the most important area for seabirds in summer was situated in the northwest, off the Scottish east coast and around Shetland and Orkney, areas where many of Britain's largest seabird colonies are to be found.

The annual acoustic survey for herring *Clupea harengus*, organised as part of the annual stock assessment by ICES (International Council for the Exploration of the Sea, based in Copenhagen), offered excellent observation opportunities for monitoring the distribution of seabirds at sea. The routes sailed were similar from year to year, with parallel transects perpendicular to the UK coast extending up to 2°E (c. 300 km from the coast) between Orkney (59°N) and the Outer Silver Pit, just to the south of the Dogger Bank (54°N). Although the ship did fish from time to time (sampling fish schools detected during the acoustic survey), these catches were infrequent, while for seabirds the ship was normally not as attractive as a commercial trawler. As a result, excellent data could be collected, from which both detailed and clear-cut distribution patterns could be derived, and differences between years could be analysed; it was possible, therefore, to study the foraging distribution and feeding interactions of seabirds in considerable detail (Camphuysen & Webb 1999).

Many seabirds perform long and often far-ranging offshore foraging trips, and as a result their foraging and feeding habits are particularly difficult to study. Recent technological advances have enabled researchers to tag birds with data-loggers measuring time, water depth, salinity and temperature during foraging trips, and with radio or satellite transmitters or even GPS recorders to obtain accurate positions. Nonetheless, while these techniques provide a fascinating insight into behaviour and movements at sea, such tools provide incomplete information on what foraging individuals do, and reveal rather little of interspecific and intraspecific interactions of seabirds at sea. Consequently, foraging decisions of pelagic seabirds are still subject to major speculation and many of the signals retrieved from these advanced instruments are difficult to interpret. So, in order to collect information on feeding techniques and foraging opportunities, in combination with species-specific feeding behaviour, these regular pelagic surveys were used to study the ecology of seabirds at sea by joining them there.



Kees Camphuysen

2. Fulmar *Fulmarus glacialis* feeding in a 'plankton soup', north of the Dogger Bank, June 2001.

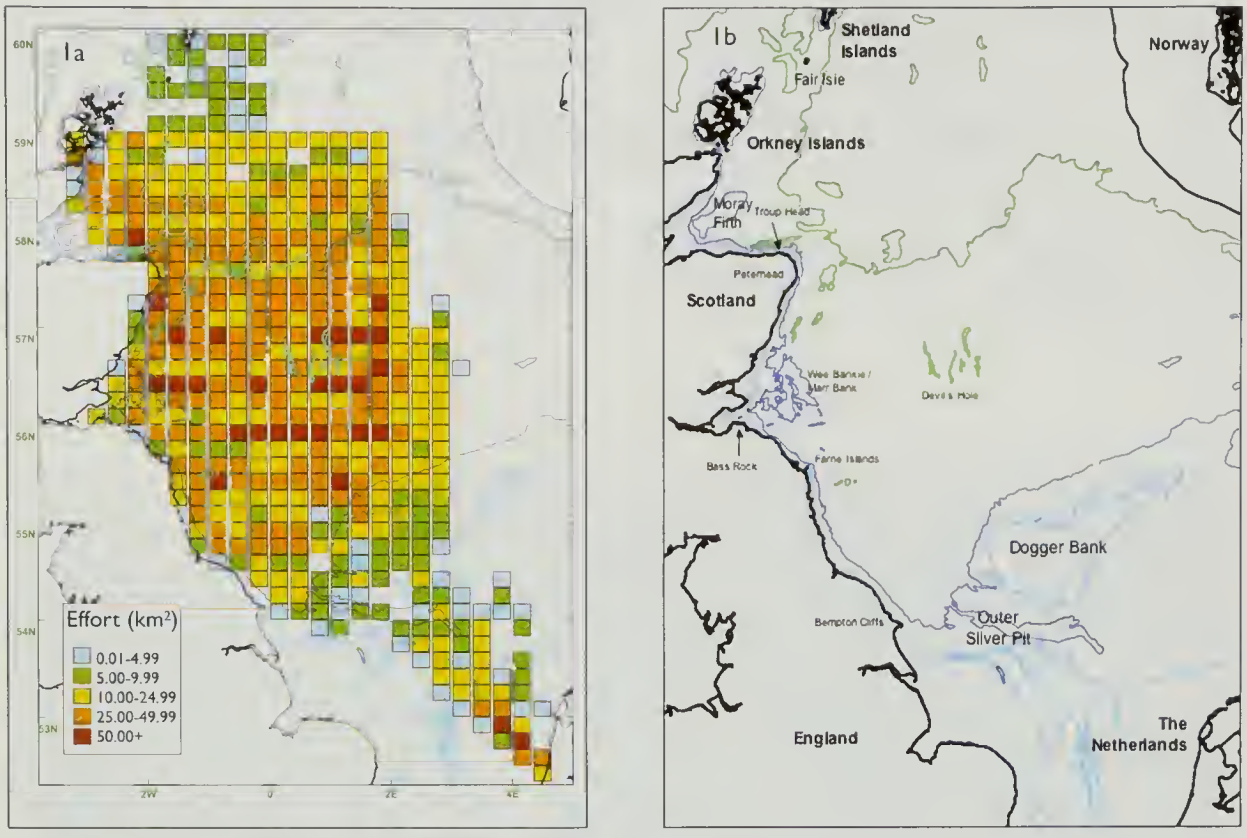


Fig. 1. The North Sea survey area. Observer effort (km² surveyed) per 10' x 20' rectangle, June-July 1991-2004 (fig. 1a); place-names (fig. 1b).

Study area and methods

The data from midsummer seabird surveys (carried out in June-July, for ten seasons during 1991-2004, and conducted in conjunction with the annual acoustic herring survey of research vessel R. V. *Tridens*) in the northwestern North Sea (an area between 54-60°N and 4°W-3°E; fig. 1) were analysed. These ship-based surveys were conducted using strip-transect counts, which were developed as a standard for surveying the North Sea (Tasker *et al.* 1984). Counts were conducted outside, from the top-deck of the ship during steaming, by one or two observers operating a 300-m-wide transect on one side and ahead of the ship. Birds were typically first sighted with the naked eye and identified using binoculars. Standard counting units were five- or ten-minute time periods (see Tasker *et al.* 1984 for details). An example of the transect design (red lines; small changes in the set-up occurred between years) and the total observer effort (km² surveyed) summarised per 10' x 20' rectangle are shown in fig. 1a.

The surveys started in The Netherlands and reached as far north as Shetland in 2003, but to enable a strict comparison between years, most of the analyses below (unless stated otherwise) were restricted to data collected between 54° and 59° N, and to the west of 3°E longitude. Surveys were discontinued during strong winds (Beaufort force 6 or more headwind, force 7 or more wind from behind) and during fog (visibility <300 m). The resulting day-to-day observer effort is summarised in table 1, showing some variation in timing between years. The amount of effort spent with distance to the British coast is presented in table 2.

It was important that feeding or foraging seabirds could be readily separated from non-feeding individuals. Standard recording methods (Tasker *et al.* 1984) were therefore slightly modified, so that the behaviour of seabirds observed was recorded, coded and stored on a database (Camphuysen & Garthe 2004). Broadly following the descriptions of Ashmole (1971), several types of feeding behaviour were recognised, including: aerial pursuit; dipping or pattering; surface seizing or pecking at the surface; scooping; pursuit plunging; surface plunging; deep plunging; pursuit diving; scavenging at fishing vessels; and 'actively' searching for prey (head down and often circling). The information on feeding behaviour became more important during later years of the cruise (1995 onwards), which necessitated reviewing the original recording forms for earlier years and extracting details of foraging behaviour that had been scribbled on the margins.

Table 1. Observer effort (km² surveyed) per day during surveys between 54°N and 59°N latitude and 3°W and 3°E longitude, 1991-2004.

Date	1991	1993	1995	1997	1998	1999	2001	2002	2003	2004	TOTAL
24 June									125.1		125.1
25 June								106.3			106.3
26 June							74.8	63.0	83.0		220.9
27 June							53.2	55.6	66.1		174.8
28 June							70.2	27.5	2.1		99.8
29 June					2.9	107.8	70.5	8.1		127.6	316.9
30 June		53.9		3.3	88.8	81.5			31.5	32.9	291.9
1 July		59.4		91.1	15.1	80.5		79.0		69.9	394.9
2 July	34.7	74.5		85.6	72.2	76.5	73.0	80.6	58.6	80.4	636.1
3 July	65.9	45.1		81.5	38.0		79.7	75.3	77.4	51.2	514.1
4 July	54.5	46.3	18.6	70.0			67.0	81.6			337.9
5 July	67.9	67.1	62.0			77.7	82.3			74.3	431.2
6 July	76.7	24.9	90.0		78.5	85.6				75.9	431.6
7 July	8.9	49.3	79.8	99.9	58.6	73.1			8.4	75.2	453.3
8 July	70.1		59.7	86.9	72.0	108.6			78.8		476.1
9 July	7.4	55.8		54.3	82.7	83.3		65.1	65.9		414.6
10 July	68.6	51.5	104.1	105.6	85.8		81.1	77.3	75.0		649.0
11 July	56.8	79.6	95.7	84.9			65.2	72.7	50.2		504.9
12 July	81.2	57.0	89.1			81.0		69.9			378.3
13 July	46.9	82.4	77.8		32.8	92.6	71.1			56.5	460.2
14 July	59.0	57.4	95.0	88.3	26.8	44.7			77.9	72.6	521.7
15 July	69.7	71.8	22.0	100.9	73.4	80.9		74.4	70.1	70.4	633.6
16 July	79.5			86.8	72.4		83.4	75.7	57.4	91.0	546.3
17 July	71.8		90.3				76.5	83.8	32.4	33.2	388.0
18 July	37.3		98.2				0.7	46.9			183.1
19 July			78.4				52.3			80.6	211.3
20 July			68.3							57.4	125.7
21 July										84.2	84.2
YEAR TOTAL	956.8	875.9	1128.9	1039.2	800.1	1073.9	1001.1	1142.7	959.9	1133.2	10111.7

Table 2. Observer effort (km² surveyed) with distance (km) from the UK coast during surveys between 54°N and 59°N latitude and 3°W and 3°E longitude, 1991-2004.

Distance	1991	1993	1995	1997	1998	1999	2001	2002	2003	2004	TOTAL	%
0-20	92.0	54.2	90.2	32.8	30.2	94.4	67.8	115.8	24.2	84.8	686.3	6.8
20-40	81.2	84.8	126.3	109.6	86.8	170.6	109.6	139.4	73.5	125.8	1107.6	11.0
40-60	67.4	67.7	119.7	100.1	74.0	143.7	76.1	109.7	100.8	109.5	968.8	9.6
60-80	69.3	63.2	87.1	90.5	58.6	103.1	74.3	87.8	83.6	101.1	818.7	8.1
80-100	74.8	46.2	108.2	87.7	72.2	79.1	73.9	68.7	69.4	98.1	778.2	7.7
100-150	205.3	178.0	241.1	214.0	134.2	168.2	180.3	186.3	232.7	223.9	1964.0	19.4
150-200	210.7	218.0	187.1	198.1	132.7	161.3	173.0	248.7	211.5	173.2	1914.3	18.9
200-250	151.9	146.2	150.8	206.5	169.7	117.0	161.7	127.8	147.8	139.5	1518.9	15.0
250-300	4.3	17.6	15.9		41.7	36.4	84.3	58.5	16.3	75.9	350.8	3.5
>300			2.7							1.4	4.1	0.0
YEAR TOTAL	956.8	875.9	1128.9	1039.2	800.1	1073.9	1001.1	1142.7	959.9	1133.2	10111.7	

All birds, whether swimming or flying, that operated 'together' or stayed tight in a particular area or in a particular movement were marked as 'flocks'. Flocks comprising more than one species were named 'multi-species foraging associations' (MSFAs) (Camphuysen & Webb 1999). The behaviour of each of the participants within MSFAs was described upon encounter, using classifications listed by Camphuysen & Garthe (2004). Important roles were



Kees Camphuysen

3. Feeding Northern Gannets *Morus bassanus*, western North Sea, June 2003.

categorised as follows: producers (underwater predators driving prey towards the surface); initiators (surface feeders detecting the prey and actually starting the multi-species feeding frenzy); joiners (additional participants); scroungers (species joining the frenzy in an aggressive and dominant way, thereby excluding initiators from further access); and kleptoparasites (see Camphuysen & Webb 1999 for details).

Results

Species composition

A total of 36 different species was recorded, comprising seabirds (29), divers *Gavia* (2), phalaropes *Phalaropus* (1) and seaduck (Anatidae) (4), totalling 297,237 individuals (Appendix 1). By far the most abundant were Common Guillemots *Uria aalge* (34.4%), Fulmars *Fulmarus glacialis* (21.7%), Kittiwakes *Rissa tridactyla* (18.0%), Northern Gannets *Morus bassanus* (11.4%), Puffins *Fratercula arctica* (6.0%) and Razorbills *Alca torda* (4.4%). Rarities included Leach's Storm-petrel *Oceanodroma leucorhoa* (one in 1998), Common Goldeneye *Bucephala clangula* (one flock of six in 1995), Red-necked Phalarope *P. lobatus* (one in 2002), Long-tailed Skua *Stercorarius longicaudus* (one in 1998), Sabine's Gull *Larus sabini* (one in 2004), Ring-billed Gull *Larus delawarensis* (one in 2002), and Black Tern *Chlidonias niger* (one in 1995).

Densities of seabirds declined markedly with distance from the coast, with rather low levels at over 100 km (fig. 2). Species richness dropped sharply beyond 40 km, from 33 ± 4.3 species within 20 km, to 25 ± 6.5 at 20-40 km and c. 15 species in all distance strata farther from the coast. Groups for which more than 60% of records occurred within 40 km from the coast included divers, cormorants, shearwaters, seaduck, skuas, *Larus* gulls, and terns. Over 70% of Gannets, Kittiwakes and large auks occurred within 80 km of the shore. Some 50% of European Storm-petrels *Hydrobates pelagicus* and nearly 75% of the Fulmars occurred farther offshore (>80 km).

Distribution patterns

Most of the distribution patterns found were extremely clear-cut, although the identification of foraging habitats requires more than simple presence or absence data. Of the scarcer species, a great deal of data (or sea time) are required to appreciate fully the general whereabouts of the species concerned and interannual fluctuations in their overall numbers and distribution.

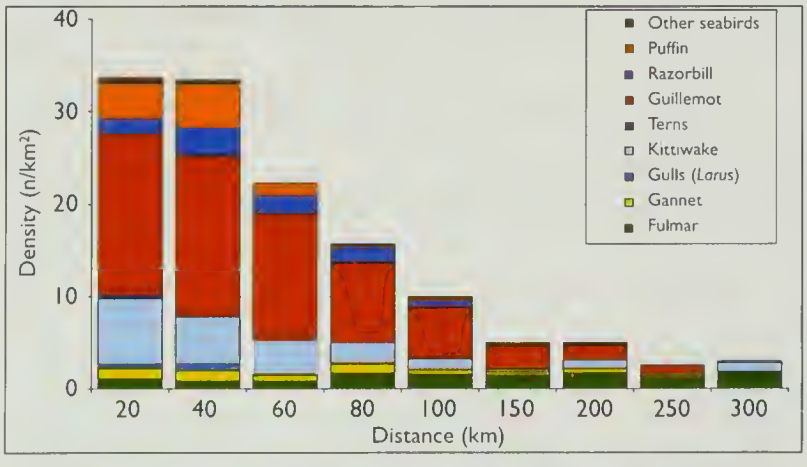


Fig. 2. The decline in seabird density and changing species composition with increasing distance from the east coast of Britain; data from surveys between 54°N and 59°N latitude and 3°W and 3°E longitude, June-July 1991-2004.

European Storm-petrel *Hydrobates pelagicus*

Almost 1,200 European Storm-petrels were seen (1,068 within 54°-59°N, 105 farther north), most of these in the deeper basin in the central northern North Sea (fig. 3a). Records near the coast were sparse, except off Peterhead in Northeast Scotland, and involved flying birds rather than foraging individuals. European Storm-petrels did associate with fishing vessels within the area where they were most abundant, but rather than joining the main feeding 'frenzies', they foraged at the periphery of the flock, for example exploiting the edges of slicks of fish oil developing around these boats. Most storm-petrels were seen feeding solitarily or in small flocks (pattering and searching in zig-zag flight) scattered over their main, pelagic distribution area. Within the core distribution area (57°30'N-59°N, 2°W-1°E), low overall densities (0.05-0.07 km^{-2}) were found in 1991, 1999 and 2002; moderate densities (0.12-0.18 km^{-2}) in 1993, 1995, 1997 and 2003; and relatively high densities (>0.2 km^{-2}) in 1998, 2001 and 2004 (fig. 3b).

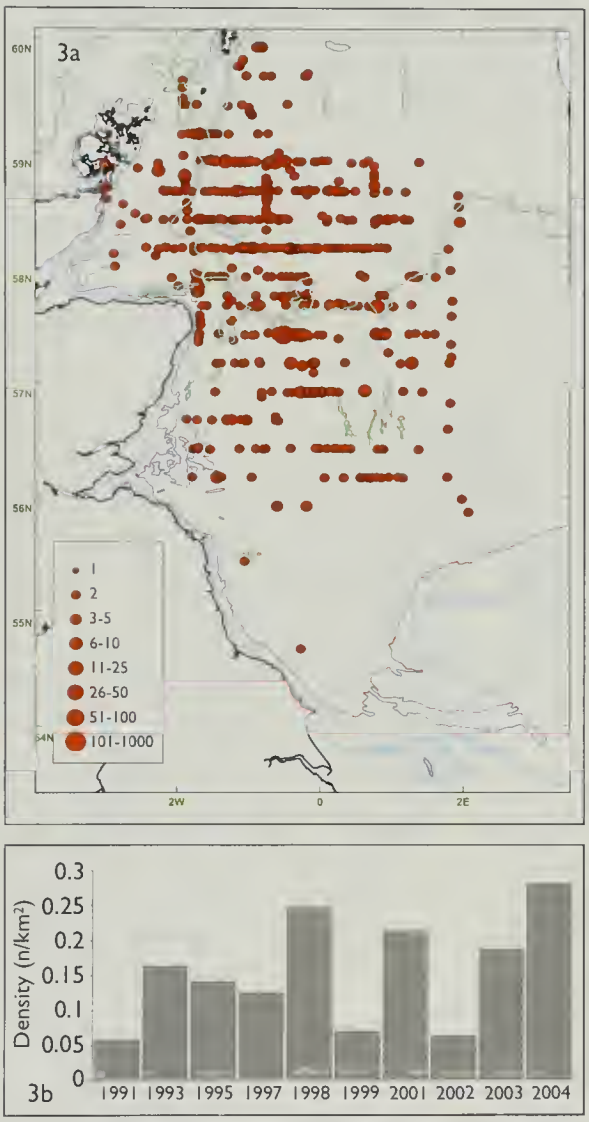


Fig. 3. European Storm-petrel *Hydrobates pelagicus*. Distribution (3a) and annual fluctuations in density (n/km^2) within their main distribution area (3b); data from surveys between 54°N and 59°N latitude and 3°W and 3°E longitude, June-July 1991-2004.

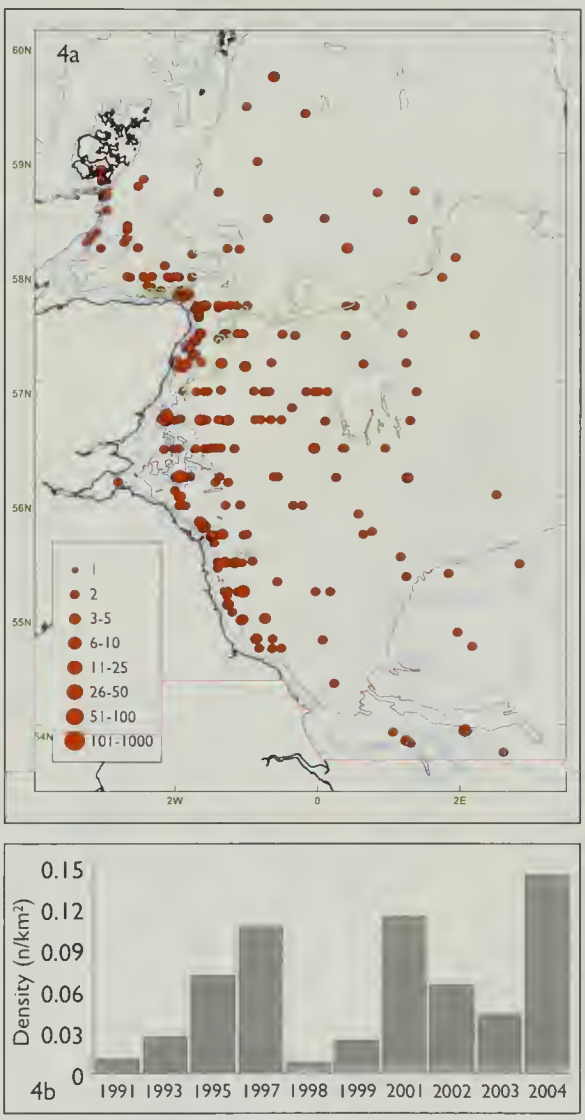


Fig. 4. Manx Shearwater *Puffinus puffinus*. Distribution (4a) and annual fluctuations in density (n/km^2) within 45 km of the east coast of Britain (4b); data from surveys in June-July 1991-2004.

Manx Shearwater *Puffinus puffinus*

Compared with that of European Storm-petrel, the distribution of Manx Shearwater was much more coastal, with 67% of birds seen within 45 km of the coast (fig. 4a); 425 individuals were recorded within 54°-59°N latitude and 75 farther north and south. Manx Shearwaters are frequently seen in summer from headlands and other sites along the British east coast, where they are known to frequent (for example) sewage outlets and river plume fronts to feed (pers. obs.). Within the coastal zone,

numerous other natural foraging opportunities occur and Manx Shearwaters were commonly seen in multi-species feeding associations (see below), where sandeels (Ammodytidae) appeared to be their main target. Within the coastal zone, relatively high densities (>0.10 km^{-2}) occurred in 1997, 2001 and 2004; moderate densities (c. 0.06 km^{-2}) in 1995 and 2002; but low densities in the other five years of the study (fig. 4b).

Great Skua *Stercorarius skua*

Great Skuas, or Bonxies, were most abundant around their breeding stations in Shetland and Orkney, but were otherwise scattered widely over much of the study area (fig. 5a). Some 773 Bonxies were recorded within 54°-59°N latitude, but over 600 were seen farther north, where observer effort was low. Bonxies were observed scavenging at fishing vessels, kleptoparasitising Gannets and large gulls, and were seen to attack and kill chicks of (mainly) Common Guillemots at sea. None of the different sea areas (northern/southern, nearshore/offshore) seemed to be of specific relevance regarding any of these foraging opportunities. It may be considered remarkable that the coastal strip (within 100 km of the coast), where seabird densities overall were so much higher than farther offshore (fig. 2), did not stand out as their main hunting area. Great Skuas were relatively scarce to the south of 56°N (fig. 5a), while between 56° and 59°N, the densities encountered were relatively consistent from year to year, typically 0.01-0.03 km^{-2} (fig. 5b). Nonetheless, relatively high numbers were found throughout the main survey area in 2004 (0.084 km^{-2}), when Bonxies were suffering from food shortages in Shetland and Orkney and breeding birds failed almost completely (Heubeck 2004).

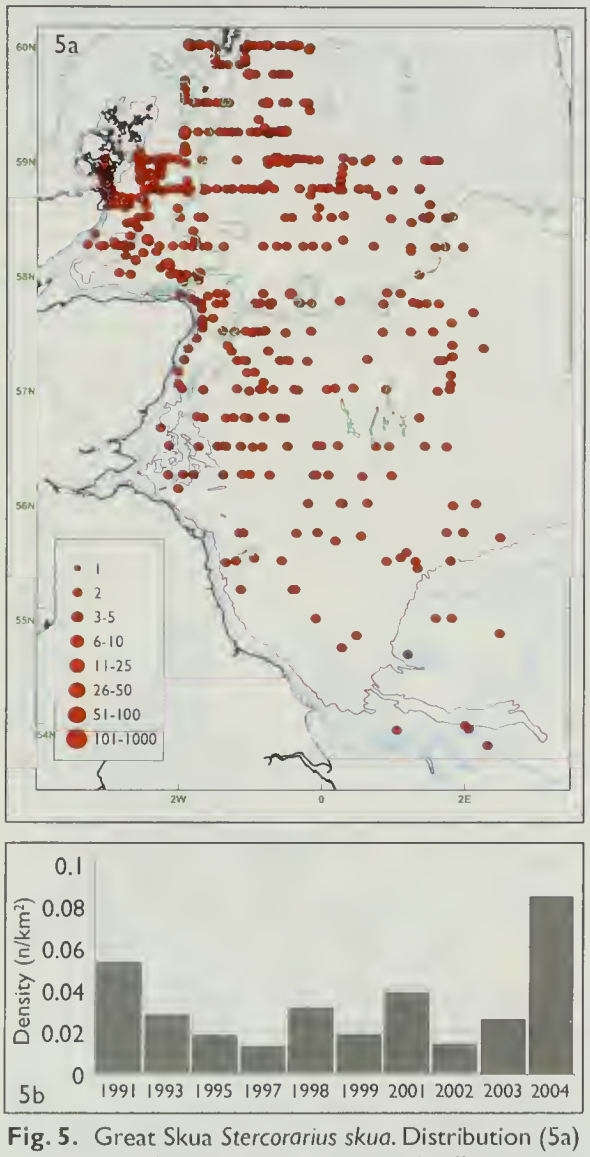


Fig. 5. Great Skua *Stercorarius skua*. Distribution (5a) and annual fluctuations in density (n/km^2) off east Scotland (56°-59°N latitude) (5b), July 1991-2004.

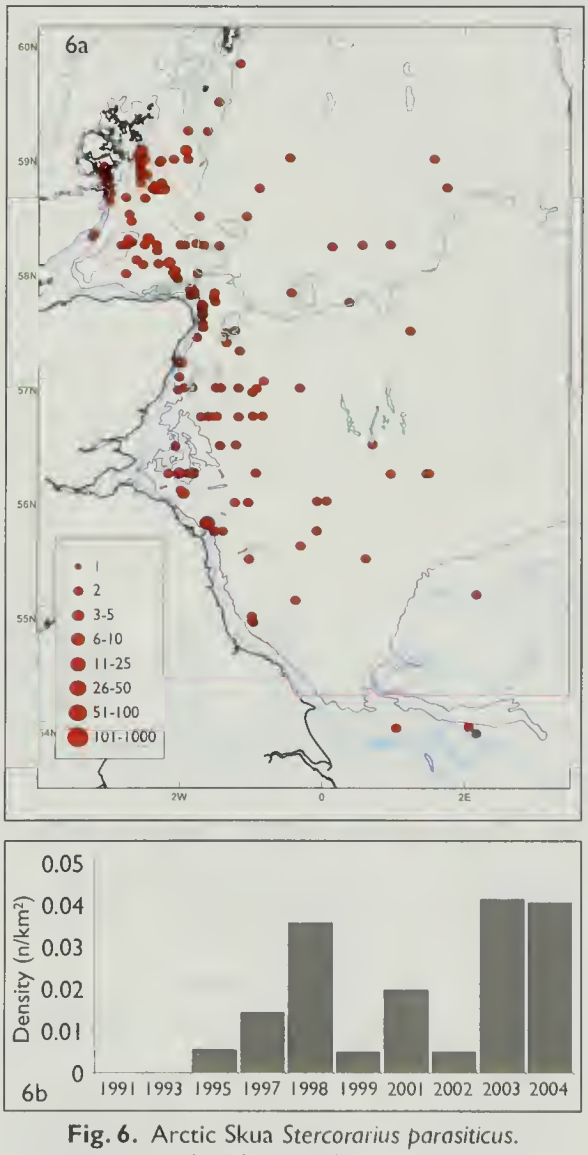


Fig. 6. Arctic Skua *Stercorarius parasiticus*. Distribution (6a) and annual fluctuations in density (n/km^2) off east Scotland (55°30'-58°30'N latitude, <100 km from the coast) (6b), July 1991-2004.

Arctic Skua *Stercorarius parasiticus*

In contrast with Great Skuas, Arctic Skuas *were* concentrated in the coastal zone, where seabird densities (and the associated opportunities to kleptoparasitise terns and Kittiwakes) are highest (fig. 6a). Within the main survey area, small numbers were encountered south to the Farne Islands, Northumberland, in most years, with few records south of the Farnes and with a concentration near the breeding grounds in Orkney. In the Moray Firth and off the Scottish east coast (55°30'-58°30'N, within 100 km from the coast), densities were highest in 1998, 2003 and 2004 (fig. 6b). Most of the offshore records were of birds simply flying past, opportunistically approaching fishing vessels with their associated Kittiwakes, and these probably involved mainly passage migrants. Of 215 Arctic Skuas recorded south of 59°N, for which age and/or plumage could be assessed, 72.6% were dark-phase individuals, and 93.1% were categorised as adults. Only a single juvenile was recorded.

Sandwich Tern *Sterna sandvicensis*

Just over 100 Sandwich Terns were encountered and, with few exceptions, were in the immediate vicinity of breeding colonies (fig. 7). These results confirm that breeding birds stay relatively close to the colonies, with only some stragglers (probably non-breeders) farther offshore.

Arctic Tern *Sterna paradisaea*

By contrast with the previous species, Arctic Terns were seen frequently and could be observed at great distance from land (fig. 8). A total of 2,222 individuals was recorded (and another 56 north of 59°N), with particular clusters of sightings around the Farne Islands, off Peterhead, and between Orkney and mainland Scotland. The status of the numerous terns encountered at larger distances from land (>100 km), where they are relatively common in some years (notably in 1995) but less so in others, is a matter of debate. Failed breeders, or adults that chose not to breed, may concentrate, forage and display at sea prior to the onset of autumn migration (Camphuysen & Winter 1996). Of 1,938 individuals for which the age was established, 99.4% were adults. Eight immatures were seen (probably second-calendar-years), as well as only four recently fledged individuals. Foraging terns (29% dipping, 26% shallow plunging, 45% actively searching) could be observed anywhere, but 68-83% of all terns within 60 km of the coast were feeding, whereas c. 50% (range 42-58%) of the terns in other distance

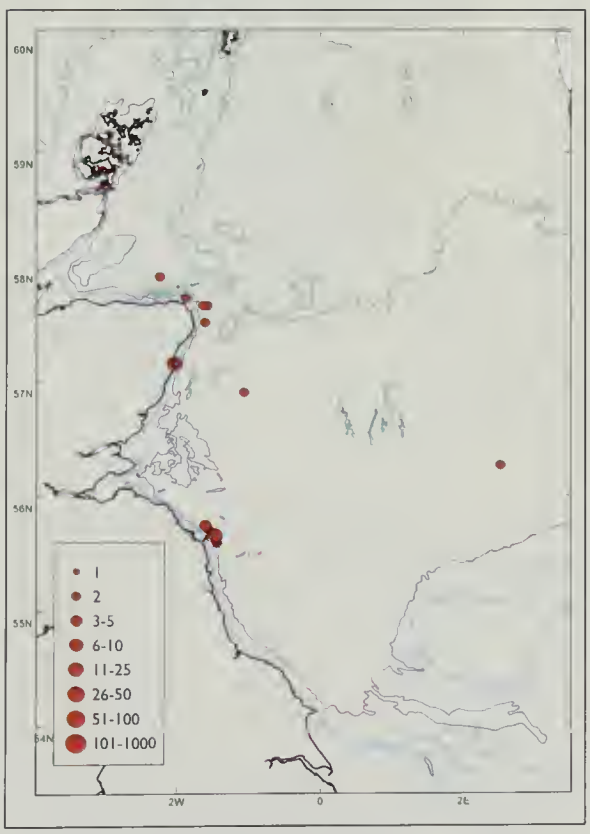


Fig. 7. Distribution of Sandwich Terns *Sterna sandvicensis*; individual records, 1991-2004.

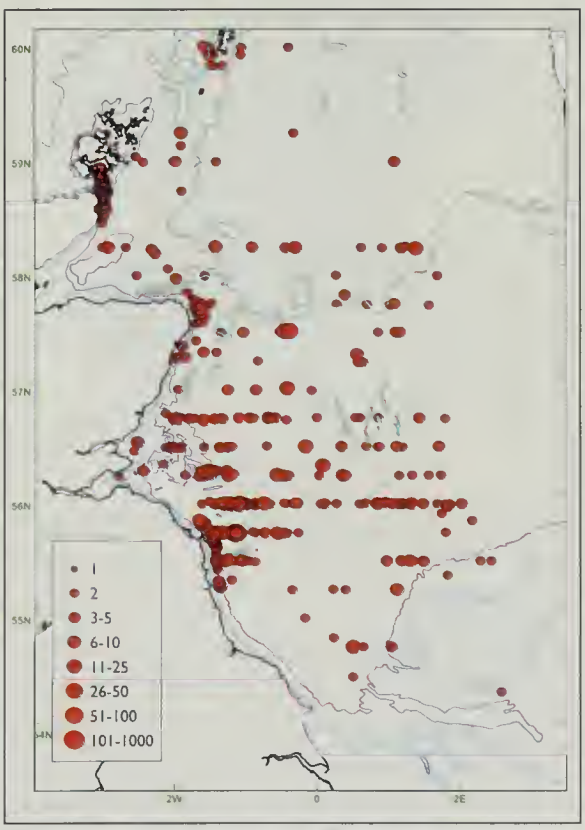


Fig. 8. Distribution of Arctic Terns *Sterna paradisaea*; individual records, 1991-2004.

strata were categorised as such. In multi-species feeding associations (see below), Arctic Terns foraged mainly at the periphery of the frenzies, avoiding direct competition with more powerful and aggressive seabirds.

The distribution patterns of the most abundant seabirds in the area are perhaps even more clear-cut than for those species described so far, and these are treated below.

Fulmar *Fulmarus glacialis*

The second most abundant species encountered was Fulmar, with 64,551 individuals recorded in the main survey area (70,543 in the area as a whole; fig. 9). Only 38 dark-phase individuals were seen (99.9% light phase, n=58,500). Many people associate Fulmars with fisheries but although it is common to find large groups swarming around trawlers, comparison of figs. 9 and 19 shows that this is only part of the story. Fulmars were most abundant in the northernmost and offshore parts of the study area, with a clear preference for thermally stratified central North Sea water compared with mixed coastal waters with freshwater incursion from rivers. It is in these former waters that Fulmars feed on zooplankton and where solitary birds or sometimes even extremely large flocks of Fulmars can be found pecking for small prey while swimming. Any active trawlers within that zone do attract vast numbers of Fulmars keen to have a free meal. Inshore trawlers are much less attractive to them, despite the discards, and despite the fact that they are closer to the birds' breeding grounds (Camphuysen & Garthe 1997). The fact that such large numbers may aggregate around pelagic trawlers (which may or may not be encountered during survey transects) causes huge between-year variability in the numbers recorded.

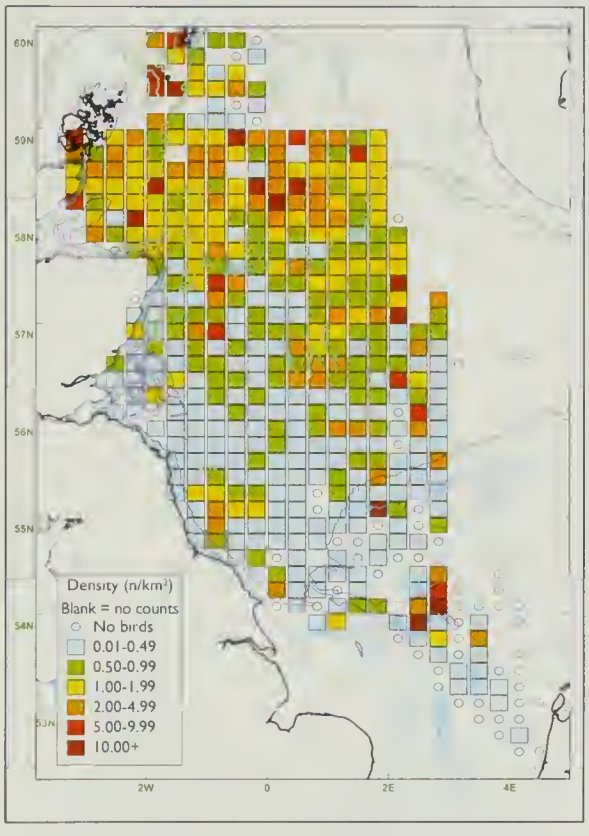


Fig. 9. Distribution of Fulmars *Fulmarus glacialis* (n/km²) in the North Sea survey area, 1991-2004.

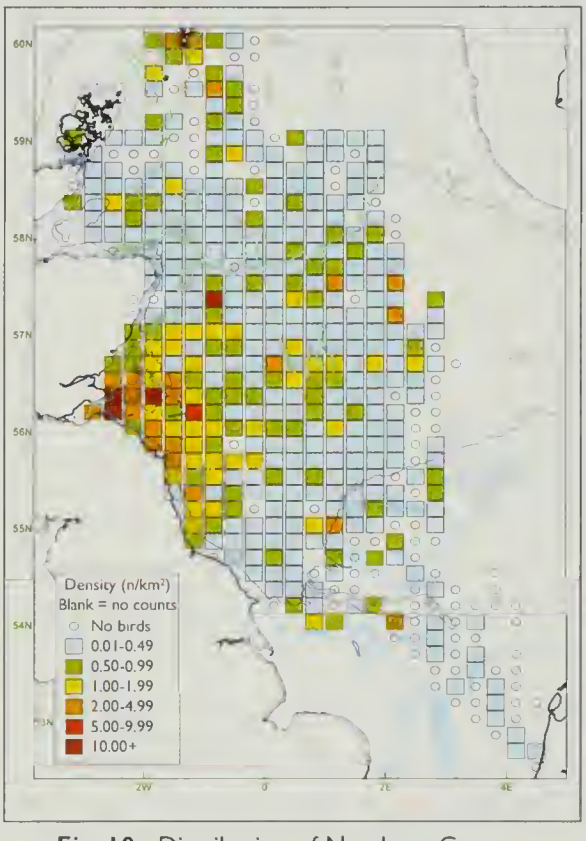


Fig. 10. Distribution of Northern Gannets *Morus bassanus* (n/km²) in the North Sea survey area, 1991-2004.

Northern Gannet *Morus bassanus*

With breeding colonies at Bass Rock, Bempton Cliffs, Troup Head and several sites in Shetland bordering the study area, Gannet was the fourth most abundant species encountered (33,867 individuals in the main survey area, 35,984 in total). The influence of the largest colony in the region, the Bass Rock in the Firth of Forth (c. 44,000 breeding pairs in the mid 1990s; Mitchell *et al.* 2004) is clearly visible in fig. 10. Satellite-transmitter data (Hamer *et al.* 2000) and ship-based sightings confirm that breeding birds from the Bass Rock disperse widely, travelling up to 600 km and more away from the

colony on foraging excursions, reaching almost to the southwest Norwegian coast and to the Dogger Bank and beyond, to the northeast and southeast respectively. Nearly 29,000 Gannets were aged, showing that with gradually declining densities away from the Bass Rock colony, the proportion of immatures increased from c. 2% near the colony to 60% at 600 km distance (fig. 11). Feeding and foraging was observed throughout the study area, but different techniques were used in different habitats. In nearshore multi-species foraging associations, Gannets fed on sandeels by scooping and shallow plunge-diving. Offshore, Gannets were highly focused on sea areas with marine mammals – dolphins (Delphinidae) and Harbour Porpoises *Phocoena phocoena* – which acted as 'beaters' and 'facilitators' during their drive hunts. These offshore birds were often searching at great heights and with their deep plunge dives they targeted larger prey, probably at 10-20 m depth. Finally, Gannets commonly fed at trawlers. Just as with Fulmars, however, their distribution pattern was not notably adjusted as a result of the presence or absence of fishing fleets and scavenging was probably opportunistic rather than the prime goal of any foraging trip.

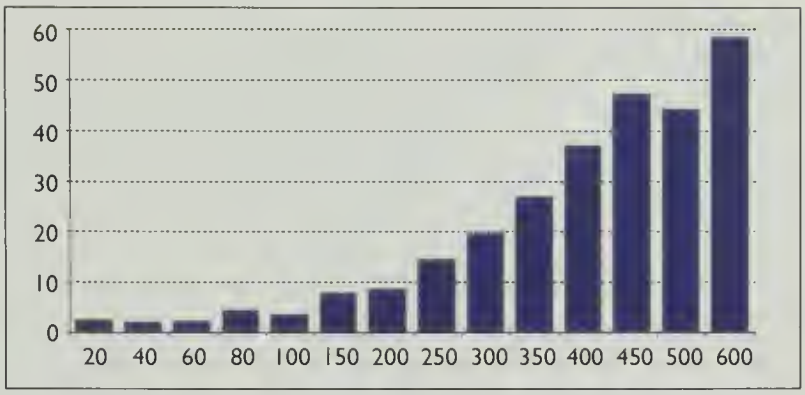


Fig. 11. Proportion (%) of immature Northern Gannets *Morus bassanus* with distance away from the Bass Rock colony, Lothian, July 1991-2004.

Herring Gull *Larus argentatus*

Herring Gulls were strictly coastal in summer, with minor concentrations off the Firth of Forth, off Aberdeen and Peterhead, and locally in the Moray Firth (fig. 12). Offshore sightings were rather rare, and offshore Herring Gulls were usually associated with gas or oil platforms.

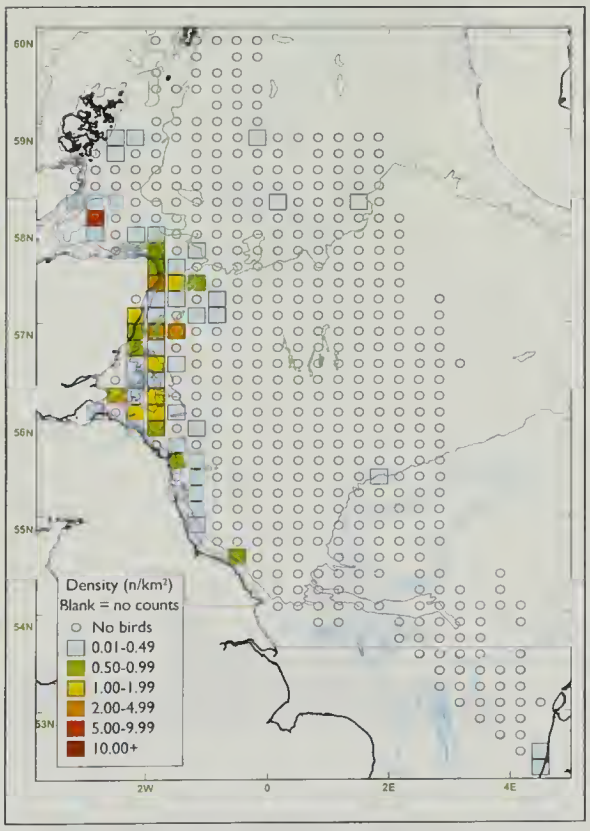


Fig. 12. Distribution of Herring Gulls *Larus argentatus* (n/km²) in the North Sea survey area, 1991-2004.

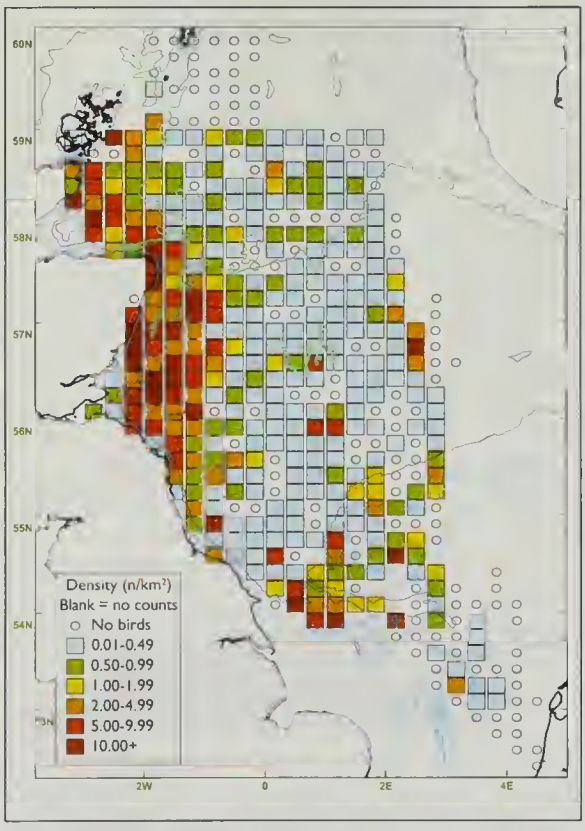


Fig. 13. Distribution of Kittiwakes *Rissa tridactyla* (n/km²) in the North Sea survey area, 1991-2004.

Kittiwake *Rissa tridactyla*

In contrast with the Herring Gull, Kittiwake was (as expected) a more truly marine seabird, being found throughout the study area (fig. 13); this was the third most numerous seabird encountered during the surveys (Appendix 1). The highest densities occurred in a 100-km-wide coastal zone between the Farne Islands and Orkney. The outer boundary of this zone, the precise location of which varied among years, weeks and sometimes even on a daily basis, was determined by the location of a frontal zone separating thermally stratified central North Sea waters and mixed coastal waters (Camphuysen & Webb 1999). It is interesting to compare figs. 9 and 13, for the main feeding area for Fulmars began beyond that front, exactly where densities of Kittiwakes declined sharply. Kittiwakes were found in high densities at and around the Dogger Bank, but most of these gulls (with the exception of those foraging in Outer Silver Pit, to the west of the Dogger Bank) were probably non-breeders. Kittiwakes were the initiators (i.e. the first surface-feeding species to detect the opportunity and to start feeding) of nearly every multi-species foraging association observed (see below), targeting surface-driven schools of sandeels.

Common Guillemot *Uria aalge*

By far the most abundant seabird in the area was the Common Guillemot (hereafter simply 'Guillemot'), with well over 100,000 individuals recorded during the surveys. High densities occurred

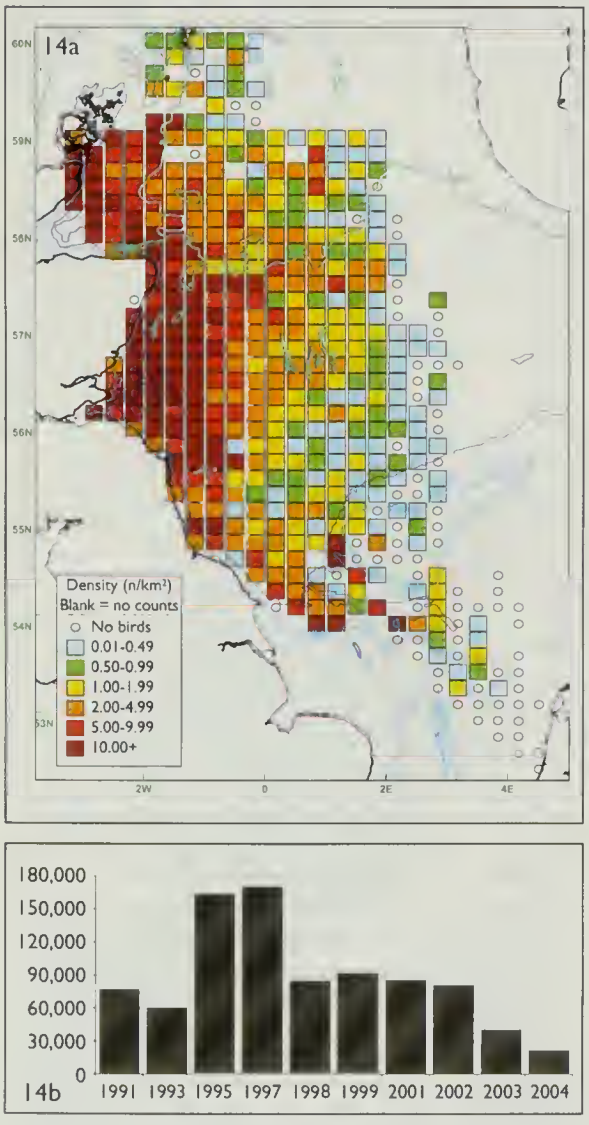


Fig. 14. Common Guillemot *Uria aalge*. Distribution (n/km²; 14a) and estimated total number of father–chick combinations recorded at sea, based on densities found between 54° and 59°N latitude within 300 km of the east coast of Britain, June-July 1991-2004 (14b).

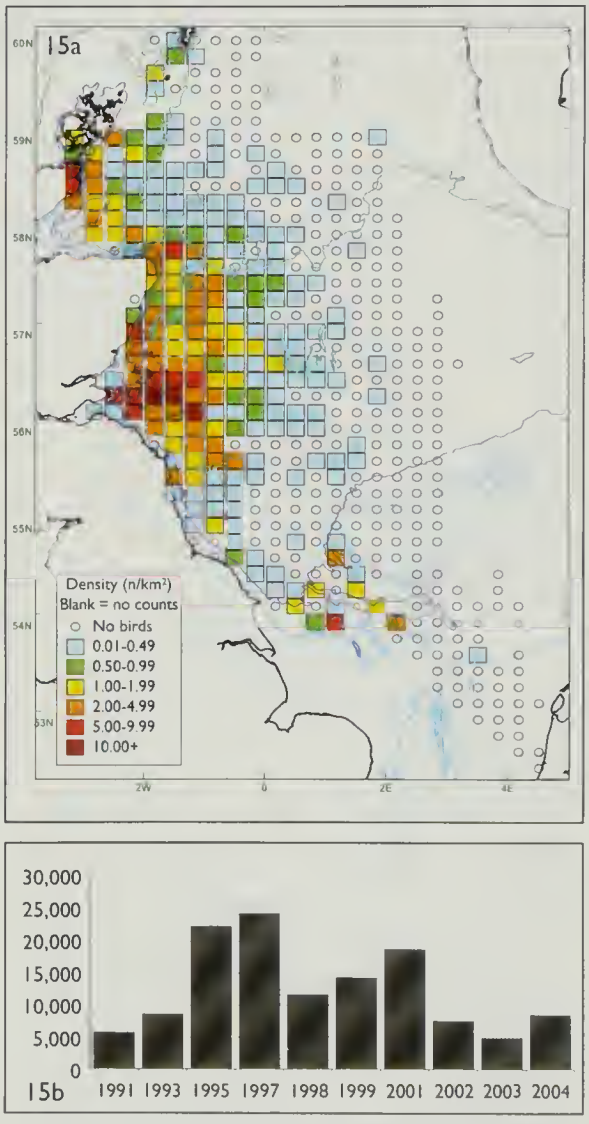


Fig. 15. Razorbill *Alca torda*. Distribution (n/km²; 15a) and estimated total number of father–chick combinations recorded at sea, based on densities found between 54° and 59°N latitude within 300 km of the east coast of Britain, June-July 1991-2004 (15b).

in a wide zone off the entire UK east coast (fig. 14a), but particularly within the Moray Firth, at the Wee Bankie/Marr Bank complex and off the coast of Fife and Aberdeenshire. Off the east coast of England, densities were lower and the zone was narrower. Peak densities occurred, just as with Kittiwakes, in the Silver Pit area, whereas around the Dogger Bank, densities were more variable. Looking at the findings in more detail, the picture is somewhat more complex. June/July is fledging time for Guillemot chicks, which subsequently cross the North Sea accompanied by an adult (usually the male parent) towards the Skagerrak in the east and towards the Frisian Front in the southeast (Camphuysen 2002). These father–chick combinations swim with a speed of approximately 2 knots and move straight through the high-density areas where the main feeding concentrations occur. Around 80,000 such father–chick combinations were estimated to have occurred at sea within 300 km from the coast in most years, but with particularly high numbers in both 1995 and 1997 and extremely low numbers in 2003 and 2004 (fig. 14b). Fish-transporting Guillemots (adults delivering fish into the colony) were frequently seen within 80 km of the nearest coast. Rafts of moulting non-breeders were most abundant at 80-100 km from shore, with local concentrations nearer the colony. Guillemots participated as the main 'producers' in multi-species foraging associations, herding mainly 0-group sandeels (those hatched during the present calendar-year) towards the surface, in the same frontal zone where breeding Kittiwakes found their outer-foraging limits, usually 40-100 km from the nearest coast.

Razorbill *Alca torda*

Razorbills, much less abundant than Guillemots, occupied a superficially rather similar, albeit much smaller, area off the British east coast (fig. 15a). High densities were traditionally found at the Wee Bankie/Marr Bank complex off the Firth of Forth, with localised concentrations in the Outer Silver Pit (southwest of Dogger Bank), and in the northern Moray Firth. Razorbills commonly joined Guillemots as 'producers' in multi-species feeding frenzies. Chicks fledged at the same time as those of Guillemots, during June-July, and variations in numbers of chicks at sea between the two species were rather similar at first glance (fig. 15b). In 2004, however, when Guillemots fledged late and chicks were extremely small, Razorbills were doing considerably better, with chicks twice the size as those of Guillemots and with reasonable numbers in comparison with other seasons. Both 1995 and 1997 were relatively good years in terms of chick numbers at sea.

Puffin *Fratercula arctica*

The highest densities of Puffins were found around the major colonies: the Farne Islands and Lindisfarne, the Isle of May, and breeding stations in Orkney and Shetland (fig. 16). Puffins were highly concentrated around these colonies, but also dispersed farther out to sea than, for example, Razorbills. Within 20 km from land, 99% of all Puffins observed were adults in breeding plumage. With increasing distance from the coast, more and more were identified as immatures (25-40% immatures in distance strata >100 km from the coast). Puffins were seen to join the major feeding frenzies in the frontal zone, but did not drive fish towards the surface as Guillemots and Razorbills were doing in joint efforts. Rather, Puffins seemingly acted mainly as individuals, diving in the periphery of the main feeding frenzies, rather than in the middle of the action. Swimming around with sandeels or clupeids in their beak, before leaving to feed the chick in the colony, Puffins were often prone to kleptoparasitism by Kittiwakes.

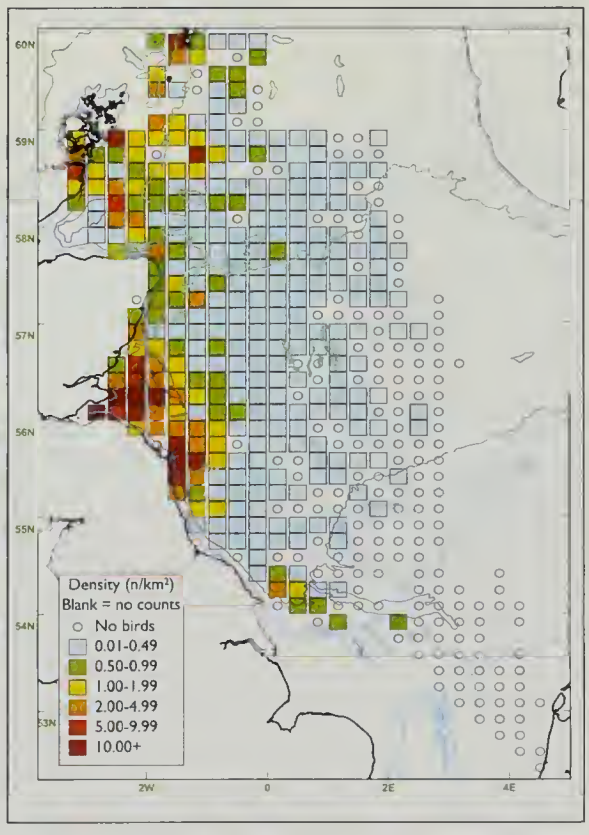


Fig. 16. Distribution of Puffins *Fratercula arctica* (n/km²) in the North Sea survey area, 1991-2004.



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4. Puffin *Fratercula arctica* with sprat *Sprattus*, Farne Islands, Northumberland, July 2003.

Foraging in flocks: multi-species foraging associations (MSFAs)

So far, the distribution of seabirds at sea has been addressed mainly at the species level. At sea, however, multiple interactions occur among species as well as within them. Apart from competition among species exploiting the same resource, facilitation is a common form of interaction, although often overlooked in previous work. The presence of one species or group of species may be important for the food-finding opportunities of another, sometimes in rather unexpected ways. By far the most important interaction between piscivorous seabirds within this study area was the formation of multi-species foraging associations (MSFAs; Camphuysen & Webb 1999). In short, small schools of fish are herded towards the surface in a concerted action by a small group of auks, usually Guillemots or Razorbills (seldom Puffins). The activity of the auks is traced down by searching Kittiwakes (occasionally by terns), and as soon as the 'fish ball' is kept at the surface by the auks, the Kittiwakes or terns start dipping or shallow plunge-diving. More seabirds stream in to participate, and finally the 'scrounger-type' seabirds arrive at the scene (large gulls, Gannets, occasionally Fulmars) to plunge into the middle of the feeding frenzy, excluding further access to the initiators of the flock, and disturbing the behaviour of the auks so that the frenzy collapses within minutes or even seconds. These flocks

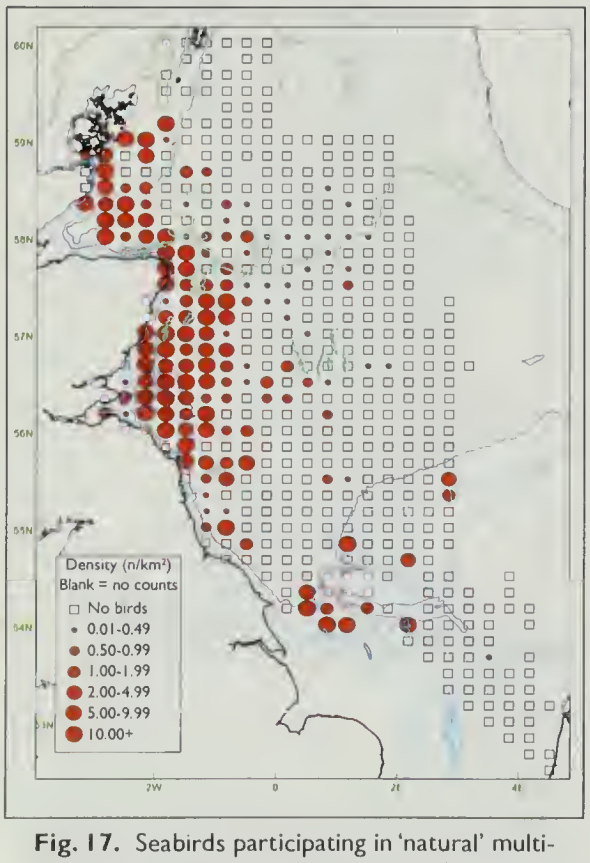


Fig. 17. Seabirds participating in 'natural' multi-species foraging associations targeting fish schools driven towards the surface by auks (n/km²).

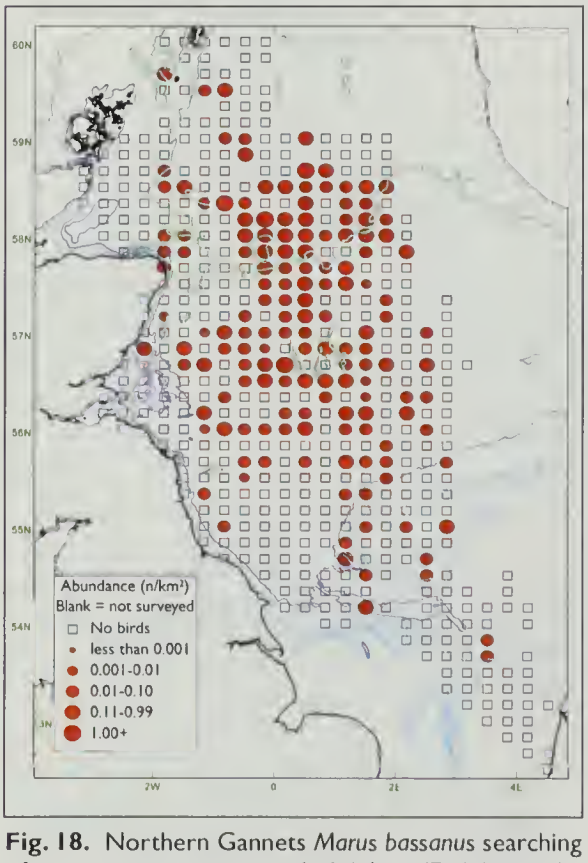


Fig. 18. Northern Gannets *Marus bassanus* searching for prey in association with dolphins (Delphinidae) or Harbour Porpoises *Phocoena phocaena* (n/km).

are most commonly formed off the Scottish east coast, between the Farne Islands and Orkney, with a second hot-spot in the Outer Silver Pit area (fig. 17; note the overlap with fig. 13).

Another common form of interaction is the effect that dolphins (mainly White-beaked Dolphins *Lagenorhynchus albirostris*) and Harbour Porpoises have on the foraging opportunities of Gannets. Marine mammals act as 'beaters', probably providing access to prey fish that would otherwise be out of reach for the birds. These associations occurred particularly in deeper waters, to the northeast of the Bass Rock colony (fig. 18). The abundant dolphins and porpoises in nearshore waters are usually ignored, and other foraging techniques used by Gannets prevail in these areas.

Both of these situations match oceanographic conditions in some way and they may be seen as mirror images of them. The MSFAs in fig. 17 occurred mainly at or on the landward side of the frontal zone separating thermally stratified central North Sea water from mixed coastal waters, whereas Gannets followed dolphins primarily in that stratified zone.

Scavenging seabirds may encounter commercial fishing activities anywhere in the study area (Camphuysen *et al.* 1995; fig. 19), with clear concentrations in some areas and rather few sightings of boats in others, but none of the seabirds analysed had a distribution pattern that even approximately matched that of the relative abundance of commercial fleets. Nonetheless, it would be foolish to conclude that commercial fisheries bear no significance for seabirds; rather, that most species exploit fisheries opportunistically, certainly in the summer (breeding) season, with natural factors better explaining their overall dispersal and range around the colonies.

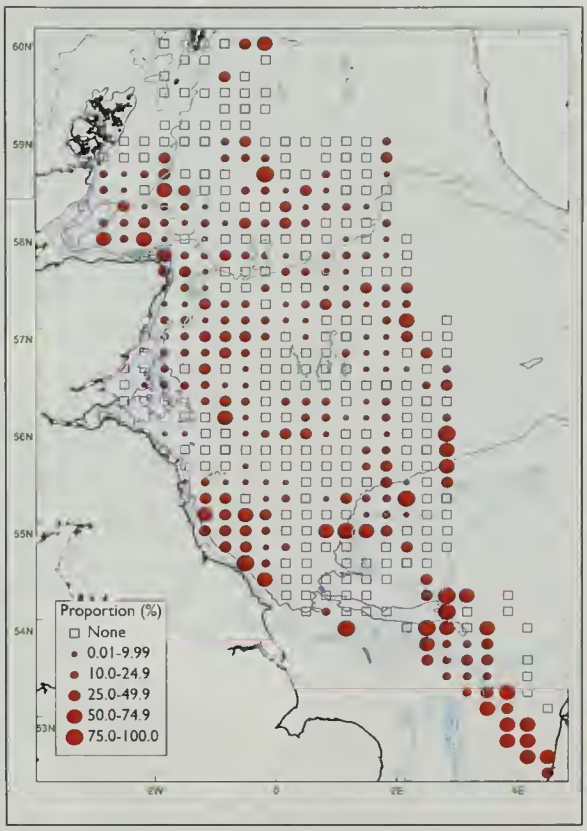


Fig. 19. Distribution of commercial fisheries in the survey area: the proportion of time surveyed with commercial trawlers in sight (%). Note that 10' x 20' rectangles in which less than 10 km were steamed have been excluded from the analysis.



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5. Multi-species foraging association (see text), off the Farne Islands, Northumberland, July 2003.



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6. A feeding frenzy comprising Fulmars *Fulmarus glacialis*, Northern Gannets *Morus bassanus* and Great Skuas *Stercorarius skua*, associated with a fishing boat close to Fair Isle, Shetland, July 2003.

Discussion

These results confirm the general importance of the northwestern North Sea for seabirds, but there are numerous differences from the results of earlier surveys (e.g. Skov *et al.* 1995, Stone *et al.* 1995). European Storm-petrels and Manx Shearwaters were both more numerous and more widespread, while Arctic Skuas penetrated deeper into the North Sea in July than suggested by previous studies (Stone *et al.* 1994, 1995). Arctic Terns occurred much farther offshore, but with considerable differences between seasons, as indicated earlier (Camphuysen & Winter 1996). Fulmar distribution was similar to that shown in the account by Stone *et al.* (1995), while the distribution pattern of Gannets was more pronounced (though note that the Bass Rock colony has doubled in size since 1995). For Kittiwakes, Guillemots and Razorbills, there are significant differences between the distribution patterns shown in the present paper and those in atlases published previously. In all recent surveys, the sea area between the Farne Islands and Bempton Cliffs appears to be remarkably poor for these three species, whereas Stone *et al.* (1995) suggested that this was one of the coastal hot-spot areas in earlier years. This discrepancy is difficult to explain. Satellite images provide data which point towards a hydrographic anomaly, which would indeed explain why so few birds utilise this area, while fisheries data also confirm the 'desert-like' characteristics of this region; yet older seabird data do not show this discontinuity. Furthermore, the present data suggest that the Wee Bankie/Marr Bank area is of great significance for Kittiwakes, whereas Stone *et al.* (1995) showed that densities to the north and south were considerably higher. The area marked as being of international importance for Guillemots in July (Skov *et al.* 1995), a narrow strip between the mouth of the River Tees and the Moray Firth, should be much wider if annual fluctuations in the precise locations of peak abundances are to be included, while an extension north (towards Orkney) and into the Silver Pit area would also be recommended. The Wee Bankie/Marr Bank complex certainly deserves the highest status for both Razorbills and Kittiwakes in any future attempt to define areas of international importance in summer in the North Sea.



Kees Camphuysen

7. Northern Gannet *Morus bassanus*, western North Sea, June 2003.

The distribution patterns shown here are rough sketches rather than accurate analyses. The broad-scale results mask a great deal of interesting data at a smaller scale, on the basis of which the relative importance of different sea areas might be evaluated. The ecological background of the patterns provided here is hidden in the absence of a clear split between birds of different status (breeding, non-breeding, foraging, non-foraging, adults, immatures, etc.). It is beyond the scope of the present contribution to provide such information. Nonetheless, the present study is unique, because for the first time it was possible to visit an extensive sea area using the same methodology and protocols over a period of 14 years. Although substantial differences from earlier surveys were found, and although there was some between-year variability in the present study, the robustness of broad-scale distribution patterns has been demonstrated, even for wide-ranging, highly mobile species such as Fulmars and Gannets. The composite maps (and the data underlying these maps) may be used to revisit the 'Important Bird Areas' analysis and to pinpoint those areas of greatest international importance with a higher degree of accuracy.

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Appendix 1. Seabirds observed and distance travelled during surveys between 54°N and 59°N latitude and 3°W and 3°E longitude, 1991-2004.

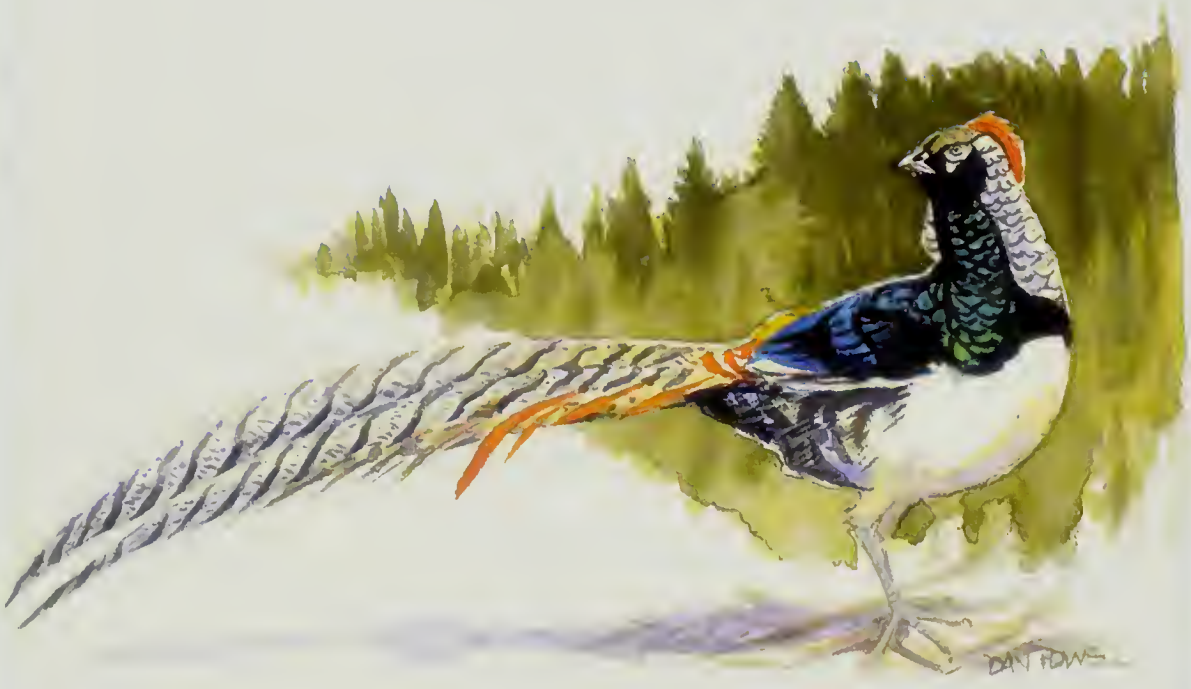
	1991	1993	1995	1997	1998	1999	2001	2002	2003	2004	Totals	Mean	%
Km travelled	3,247	2,943	3,818	3,470	2,857	3,584	3,363	3,809	3,200	3,777	34,069	3,407	
Common Eider *Somateria mollissima*								5		4	9	1	
Common Scoter *Melanitta nigra*			1	12		25	27	173	12	21	271	27	0.1
Velvet Scoter *Melanitta fusca*								13			13	1	
Common Goldeneye *Bucephala clangula*			6								6	1	
Red-throated Diver *Gavia stellata*					1				2		3	0	
Black-throated Diver *Gavia arctica*	2	1									3	0	
Fulmar *Fulmarus glacialis*	3,550	4,074	3,833	3,867	9,879	5,365	8,316	9,456	6,366	9,845	64,551	6,455	21.7
Sooty Shearwater *Puffinus griseus*	1		1				1	1	2		6	1	
Manx Shearwater *Puffinus puffinus*	28	20	50	51	9	16	43	66	35	107	425	43	0.1
European Storm-petrel *Hydrobates pelagicus*	261	153	118	65	166	60	55	21	62	107	1,068	107	0.4
Leach's Storm-petrel *Oceanodroma leucorhoa*					1						1	0	
Northern Gannet *Morus bassanus*	1,198	1,616	3,760	2,253	1,434	2,618	3,272	7,434	4,097	6,185	33,867	3,387	11.4
Great Cormorant *Phalacrocorax carbo*						1	1	6		1	9	1	
Shag *Phalacrocorax aristotelis*				8		39	7	220		13	287	29	0.1
Red-necked Phalarope *Phalaropus lobatus*								1			1	0	
Pomarine Skua *Stercorarius pomarinus*	2						1		1	2	6	1	
Arctic Skua *Stercorarius parasiticus*	32	9	16	9	41	18	29	13	33	57	257	26	0.1
Long-tailed Skua *Stercorarius longicaudus*					1						1	0	
Great Skua *Stercorarius skua*	100	47	60	32	87	48	83	64	75	177	773	77	0.3

Appendix 1. Seabirds observed and distance travelled during surveys between 54°N and 59°N latitude and 3°W and 3°E longitude, 1991-2004. (continued)

	1991	1993	1995	1997	1998	1999	2001	2002	2003	2004	Totals	Mean	%
Little Gull *Larus minutus*				6		1	1	1			9	1	
Sabine's Gull *Larus sabini*										1	1	0	
Black-headed Gull *Larus ridibundus*	58	15	16	9		6	7	50	21	136	318	32	0.1
Ring-billed Gull *Larus delawarensis*								1			1	0	
Common Gull *Larus canus*	26	9	20	10	3	15	30	12	30	35	190	19	0.1
Lesser Black-backed Gull *Larus fuscus*	145	80	72	44	168	139	119	182	165	58	1,172	117	0.4
Herring Gull *Larus argentatus*	142	223	415	130	204	147	961	628	433	24	3,307	331	1.1
Great Black-backed Gull *Larus marinus*	27	104	18	12	66	66	164	84	42	113	696	70	0.2
Kittiwake *Rissa tridactyla*	3,557	2,274	7,131	4,118	3,846	5,921	4,710	7,081	3,564	11,301	53,503	5,350	18.0
Sandwich Tern *Sterna sandvicensis*	2		1	1	11	3	3	26	49	11	107	11	0.0
Common Tern *Sterna hirundo*	7		3		5			17	1	6	39	4	
Arctic Tern *Sterna paradisaea*	45	32	235	37	62	93	86	289	605	738	2,222	222	0.7
'Commic' tern *Sterna hirundo/paradisaea*	47	5	2			1					55	6	
Black Tern *Chlidonias niger*			1								1	0	
Common Guillemot *Uria aalge*	3,944	3,134	11,344	13,055	6,469	10,319	13,285	14,049	8,079	18,550	102,228	10,223	34.4
Razorbill *Alca torda*	436	406	1,304	2,305	1,066	1,052	2,291	1,644	889	1,794	13,187	1,319	4.4
Common Guillemot/Razorbill	82		160	40	71	98	202	98	3	52	806	81	0.3
Black Guillemot *Cepphus grylle*						6	11	5		2	24	2	
Puffin *Fratercula arctica*	231	560	1,478	2,409	723	1,682	1,737	6,156	1,522	1,316	17,814	1,781	6.0

The status of Lady Amherst's Pheasant in Britain

Barry Nightingale



Dan Powell

ABSTRACT This paper discusses the recent severe decline in the population of Lady Amherst's Pheasant *Chrysolophus amherstiae* in Britain. Possible causes for the decline are outlined, with habitat change, either through human activity or the natural maturation of conifer plantations, being probably the most significant.

This paper reviews the status of Lady Amherst's Pheasant *Chrysolophus amherstiae* in Britain, from the time of its original introduction to the spring of 2004. It explores possible reasons why this species has seemingly slipped into such irreversible decline that it could be extinct in Britain by 2010, and perhaps before. In support of these key objectives, the paper provides general information about the species in its natural range, and reviews introduction attempts in Britain, focusing principally on Bedfordshire, where the main British population exists.

Native range and habits

Lady Amherst's Pheasant is a typical forest pheasant, being shy and retiring, and preferring to run for cover rather than take flight. It is best located by the trisyllabic song of the male in spring. Its native range encompasses southwest China and adjoining areas of southeast Tibet and upper Myanmar, where it frequents wooded slopes, bamboos and other thickets or dense bushes, often on rocky ground, generally between 2,100 and 3,600 m, but locally up to 4,600 m in Yunnan. Han *et al.* (1990) identified deciduous secondary forest and bush as the pre-

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ferred habitat in Yunnan, and reported a population density of 6.2 birds/km². In China, it is considered to be an uncommon species, although this is based on limited data, while its status in Myanmar is effectively unknown. There appears to have been no study of this species in its natural range since the 1980s (P. McGowan pers. comm.).

Lady Amherst's and Golden Pheasants *C. pictus* are two closely related and genetically similar species, and wild hybrids occur where the ranges of the two species overlap (Johnsgard 1999). While the population is in no obvious danger, it is perhaps near threatened and is close to qualifying for 'Vulnerable Status' (Fuller & Garson 2000). In the native range, threats include habitat loss and fragmentation and, to a lesser degree, hunting, both for food and for the attractive plumes. The world population is perhaps no more than tens of thousands (Madge & McGowan 2002), and is decreasing (McGowan & Garson 1995).

Males establish territories (on average 0.08 ha) in late March, which they defend vigorously; display occurs in open forest glades. Males wander and feed in the forest with 2-4 females in the breeding season, and are thought to be polygamous. The simple nest – a round, shallow pit lined with dead leaves – is hidden in thickets or under dead branches. The eggs are pale buff or white, incubation takes approximately 24 days, and newly hatched young remain in the nest for several hours before being led by the female to look for food. They do not return to the nest-site. Families conceal themselves in thickets when they roost; when the young can fly, they roost in trees. The male takes no part in nest construction, incubation or raising the young. The diet of Lady Amherst's Pheasant is predominantly plant matter, particularly bamboo shoots, but also includes invertebrates (e.g. earwigs (Dermaptera), spiders (Araneae) and beetles (Coleoptera)) and some grain, nuts and seed (Yang Lan 1992). In autumn and winter, groups of 20-30 birds may be seen together, and in the past, groups approaching this size could be seen in Bedfordshire gathering at winter feeding stations provided for Common Pheasants *Phasianus colchicus*.

Captive breeding and introduction schemes

The first two Lady Amherst's Pheasants were brought into Britain by Lady Sarah Amherst in 1828, although they died only a few weeks after arrival (Mearns 1988). They were first bred in captivity in Britain in 1871. From the outset, females were scarce and many hybrids were produced using female Golden Pheasants (Howman 1979). Lady Amherst's is still one of the most popular choices for pheasant breeders to keep in captivity, and under such conditions 6-12 eggs are laid in early April. Birds live in excess of 90 months in captivity (Johnsgard 1999), probably less in the wild.

Various introduction attempts have been made, but only those in Britain have met with any degree of success. The species was introduced into the Hawaiian Islands in 1931-33, apparently from captive-reared stock from the USA, but it is not known whether it became established. It was also imported into New Zealand in 1907, but it is not known whether it was liberated there. There was also an unsuccessful attempt to introduce the species into Colombia (Long 1981).

In Scotland, Lady Amherst's × Golden Pheasant hybrids were introduced at Mount Stewart (Strathclyde) by the Marquess of Bute in around 1895, and about the same time by the Duke of Bedford at Cairnsmore, near Newton Stewart (Dumfries & Galloway). They were all, unfortunately, released with Golden Pheasants, and the latter soon obliterated the Lady Amherst's characteristics. In 1971, some Lady Amherst's were found hybridising with Golden Pheasants in Galloway; these may have been descendants of the original birds or perhaps more recent releases. In the 1890s, pure-bred stock was first released at Woburn (Bedfordshire). Lady Amherst's Pheasants released at Beaulieu Manor Woods (Hampshire) in 1925 succeeded for a while, and in the late 1950s they were established within a 13-16-km radius of Exbury in the New Forest; 11 were still there in 1973, but it is likely that these too hybridised with Golden Pheasants. Lady Amherst's were introduced into Richmond Park (Surrey) in 1928-29 and 1931-32 (when 24 were released); at Whipsnade Park (Bedfordshire) in 1931-32; and Halkyn churchyard (Clwyd) sometime in the mid twentieth century. The Clwyd birds never formed a self-sustaining population and probably died out in about 1998 (N. Hallas pers. comm.). Birds were released at Elveden (Suffolk) in 1950, and although these were initially successful, they were short-lived and disappeared after a few years (perhaps because Golden Pheasants were already well established

there; Lever 1987). Lady Amherst's Pheasant has since been withdrawn from the Suffolk List (Piotrowski 2003). It was added to the Norfolk List in 1973, following successful breeding at Guist and Quidenham, but there have been only a handful of Norfolk records since then, and the species was removed from the Norfolk List in 1986 (Taylor *et al.* 1999).

The species' history in Bedfordshire and neighbouring counties

From their introduction at Woburn (all localities are in Bedfordshire unless stated otherwise) in the 1890s, the species spread into woodland along the Greensand Ridge, a well-wooded area that runs southwest to northeast across the southern half of Bedfordshire. Here, the pheasants favoured mixed plantations of Scots Pine *Pinus sylvestris*, Ash *Fraxinus excelsior* and Pedunculate Oak *Quercus robur*, with some Beech *Fagus sylvatica*, Sycamore *Acer pseudoplatanus* and Sweet Chestnut *Castanea sativa* (Cannings 1999), and an understorey layer, often of rhododendron *Rhododendron ponticum* clumps on the more acidic soils, and coniferous thicket on the boulder clay. Following releases in the 1950s, a separate colony also became established in south Bedfordshire, in the estate at Luton Hoo, where again the habitat was rhododendron clumps among conifers. Birds were also released at Whipsnade Park in the 1930s, but there have been no records from that area since the 1960s.

Nothing was published about this species in the Bedfordshire annual bird reports prior to 1971, when it was added to Category C of the British List. In that year, at least four young were seen in Luton Hoo and a pair raised young at Warden Great Wood, while in the following year a pair bred at Maulden Wood. Since 1971, proven breeding has occurred in just four localities in Bedfordshire: Luton Hoo (in seven years between 1971 and 2001); Charle Wood (in six years between 1979 and 1989); Warden Great Wood (1971); and Maulden Wood (at least 1972). At the last site, in December 1991, six first-years with a mature female were also seen indicating that breeding almost certainly took place there that year. Given how difficult it is to prove that breeding occurred, it is almost certain that successful attempts were made in other years, and at other sites.

Fieldwork for the first national breeding atlas, carried out during 1968-72, produced the first published estimate of the UK population, of 100-200 pairs (Sharrock 1976). The Bedfordshire population was first estimated at 250 birds, as a result of fieldwork during 1968-77, for the *Bedfordshire Bird Atlas* (Harding 1979). That project found the species in 32 tetrads in Bedfordshire; particular hot-spots included Washers and Daintry Woods (25 individuals), Chicksands Wood (10) and Charle Wood (40). This last locality was one of the more reliable places to see the species, and during the 1980s, breeding records from there included 30-40 young reared in 1982, 35 in 1983 and 15-20 in 1984. By the mid 1980s, however, the area had become increasingly disturbed by walkers and birdwatchers and, with the trees maturing and much of the undergrowth cleared, it had already become more unsuitable for Lady Amherst's Pheasants. In 1984, more were released at nearby Woburn to supplement the stock as they had 'declined severely' (Lever 1987).

The pheasants spread naturally from the Woburn population west into Buckinghamshire to occupy similar habitat in the woods around Bow Brickhill, a distance of some 5 km. The population there reached 20 singing males in 1976, and a small number still exist. Further releases were made at Mentmore (Buckinghamshire) in 1930 (Lack & Ferguson 1993) and a small population remained until the late 1960s. The releases at Whipsnade were thought to be responsible for sightings in the nearby Ashridge Estate (Buckinghamshire), but there have been no records from there since 1985, or from Mentmore since the 1960s.

In Bedfordshire, the decline was documented in the annual bird report for 1987, which stated that the population 'appears to be in decline in most of the former strongholds'. In that year, it is likely that the population was already down to around 180 birds. The bird report for 1995 warned that 'the once healthy population [in Luton Hoo] could well become extinct in the early years of the next century'. Trodd & Kramer (1991) estimated the Bedfordshire population to be 100-200 individuals, and this estimate was thought still valid after the fieldwork for the *Breeding Atlas of Bedfordshire*, during 1988-92 (Dazley & Trodd 1994). By then, the Bedfordshire population had contracted, particularly in the northeast part of the range, and the pheasants were found in only 24 tetrads, a reduction of 25% in distribution between the two local atlas periods. Nonethe-

less, it should be emphasised that this species is difficult to census, and prior to the 1990s many population estimates in local bird reports, particularly for those areas encompassing private land, were made by estate workers. Some of these early estimates may well have been over-optimistic, while many earlier published records that refer to a number of 'pairs' were probably based on singing males, with the assumption that each male had one female, and it is possible that there has always been a shortage of females.

The first full survey of this species in Bedfordshire and neighbouring parts of Buckinghamshire was carried out by the Bedfordshire Bird Club during 1995-97, and was based on locating males by their distinctive song, which can be heard at dawn and dusk during the spring. Males also make a soft 'quep' contact call and a sharp, explosive rattle, although this has rarely been heard by the author and is generally of little use when trying to find this species. In 1995, 84 males and 29 females were located; in 1996, 68 males and 19 females; while in 1997 only 48 males and 10 females were found. Some of the biggest groups were in four traditional locations: Luton Hoo Estate (a maximum of 15 males, three females); Maulden Wood (five males, one female); Woburn Park (ten males, three females); Charle Wood (three males). The rest were spread among other woods along the Greensand Ridge, of which six males were found northeast of Ampthill, with the majority in the woods to the west, between Ampthill and Bow Brickhill (Buckinghamshire). Based on findings in the species' native range, it was assumed that if each male, taking the maximum found at each site in any one year of the survey, had attracted two or three females, then the population size could theoretically have been as high as 170-340 birds (Cannings 1999). In the author's experience, however, the proportions of males and females in Bedfordshire have been quite the opposite, with males heavily outnumbering females. Consequently, it seems more likely that the population was more realistically 100-125 birds, in line with the estimate by Trodd & Kramer (1991).

By extrapolating the results from subsequent survey work, the population dropped to around 75 birds by 1999, and perhaps to just 30-40 by 2001. In spring 2004, all woods in Bedfordshire and Buckinghamshire with previous records of this species, and woods offering potential habitat, were visited. Although some areas were private, the song of Lady Amherst's Pheasant is far-reaching, and all targeted areas could be covered directly or from adjacent access points. Just nine males and one female were found, at seven different localities. The maximum number at any one locality was three males. There were no records from Maulden Wood during 2001-03, the last substantiated report from Luton Hoo was in 2002, and the last from Charle Wood (of a single male) was also in 2002. It seems likely that the current population in these two counties is probably no higher than 20 males, with an unknown number of females.

In Hertfordshire, there are no confirmed breeding records, the most recent reports being a singing male in March 2004, and an unsubstantiated report in 2003. Both records were well away from any known population and were probably recent escapes or releases (M. Ilett pers. comm.). Historically, most of the records from Hertfordshire were probably wanderers from the Luton Hoo Estate, which lies close to the Hertfordshire boundary.

Possible causes of the decline of the Bedfordshire population

The Bedfordshire population has survived, although undoubtedly augmented by further releases, from the 1890s to the present day. From a relatively healthy population of 250 or so in the 1970s, to perhaps less than 20 males and an unknown number of females in 2004, the decline has recently been sudden and dramatic, yet the causes are poorly understood. In its natural range there is heavy predation of adults and young by Red Foxes *Vulpes vulpes*, Yellow Weasels *Mustela sibirica* and Hog Badgers *Arctonyx collaris*, while Red-billed Blue Magpies *Urocissa erythrorhyncha* steal eggs from the nest when the female is absent (Han *et al.* 1990). In Bedfordshire, Red Foxes are thriving; a mammal survey during 1971-85 found them in 197 tetrads (53% of all tetrads in the county), but during a follow-up survey in 1995-99 they had spread to 297 tetrads, and were the third-most widespread mammal in the county (M. McCarrick pers. comm.). It seems likely that such an increase has had some effect on Lady Amherst's Pheasants, and there is evidence from Maulden Wood of predation by foxes. The large number of Muntjac Deer *Muntiacus reevesi* in Bedfordshire and Buckinghamshire may have destroyed some of the understorey that the pheasants depend on for cover and nesting,

while predation by Magpies *Pica pica* and Northern Goshawks *Accipiter gentilis* may also have had some effect. Pressure from over-eager birdwatchers may have also caused some disturbance, particularly in the breeding season, and regrettably this is likely to increase as the species becomes more and more difficult to find.

Being naturally a high-altitude pheasant, Lady Amherst's should be resistant to cold and damp, but five dead males were found in Luton Hoo in heavy snow in January 1982, and several were found dead there after the 1986/87 winter. It is possible that winter feeding of Common Pheasants helped sustain Lady Amherst's during the harshest of winter periods, when natural food would have been at a low level, and that recent cessation of game management in some areas may have had an effect on the birds' survival. Nonetheless, there was no game-rearing in Maulden Wood, where a once-strong population has all but disappeared, so this would not have been a factor in the decline at that site. Members of the World Pheasant Association involved in captive breeding have not reported any disease outbreaks affecting this species (P. McGowan pers. comm.), so that seems an unlikely explanation.

As the population declined, the absence of suitable wildlife corridors would in many cases have prevented interchange between colonies. Small, isolated populations would have become unsustainable, with inbreeding probably leading to problems of disease susceptibility and reduced fertility. This would certainly have been the case for the population at Luton Hoo, some 25 km from the nearest known group. There is also evidence that, at winter-feeding stations, Lady Amherst's Pheasants are aggressive towards Common Pheasants, and there may have been some efforts by gamekeepers to eliminate them from game-shooting areas.

Although a small population of Golden Pheasants became established in Bedfordshire, and were found in some of the woods supporting Lady Amherst's Pheasants, they died out in the 1970s, with the last record at Maulden Wood in 1977 (Trodd & Kramer 1991), and therefore cannot be implicated in the decline of their close relative.

One of the main causes of the decline is probably habitat change, either natural or through human intervention. At Charle Wood, where the population in the 1980s may have reached 20 males, the area has been developed as a golf course, and there have been no records from the site since a single male, present from 1997 to 2002. At another site on the Greensand Ridge, which supported up to 12 males in the 1990s, a large part of the area was felled for commercial timber prior to the 2002 breeding season. In spring 2004, there were just three surviving males there. In another area, supporting up to 15 birds in 1991, the population crashed after much felling and clearing in 1996, and there have been no records from that site since 1999.

Change in woodland structure has probably been a major factor. Many of the woodlands in which the species formerly occurred were forestry plantations grown for lumber, and consequently were rotated regularly. Starting in the early 1950s and continuing into the 1960s, what were considered to be uneconomical broadleaved woodlands were replaced by conifer plantations. These are now maturing and have far less thicket habitat. Until these woodlands reach economic maturity (60-70 years after planting) and are replaced, there will be a lack of thicket-stage habitat. Ironically, the trend may well be to replace them with broadleaf plantations, so the situation will have gone full circle. In addition, more woodlands are being taken out of the commercial sector and being moved over to recreational and amenity use, and this in turn is leading to more disturbance from human activities.

Some of the more interesting work in Bedfordshire comes from an unpublished study by Pat Cook, a Forest Enterprise Wildlife Ranger, based in Maulden Wood. This is an area of almost 1.5 km^2 and the pheasants arrived 'naturally' as part of their expansion along the Greensand Ridge. He found good evidence of Lady Amherst's Pheasants being there from the late 1940s, and several retired forestry workers remember them in 'good numbers' in the 1950s and 1960s. Indeed, members of the public would regularly search the wood for the long tail feathers after the birds had moulted. This period coincided with most of the planting in the northern half of Maulden Wood being at the thicket stage. Clear-felling of poor quality hardwoods and replanting with conifers began in 1951 and was completed by 1975, thus providing suitable habitat for a relatively large population of Lady Amherst's Pheasants. It is possible that there were as many as 50 birds there in the late 1980s (Trodd & Kramer 1991),

but by 1990 the number had dropped to around 20. By 1996, the habitat had matured dramatically, with thicket-stage plantations transformed to pole-staged thinned woodland. Little thicket plantation remained by 1996 (maybe 15% of the area that existed in 1975) and the Lady Amherst's Pheasants had dropped to a minimum of four males and a single female, and a possible maximum of 8-10 birds. The territories of the males were closely aligned with the remaining areas of thicker planting of Corsican Pine *Pinus nigra* but, interestingly, they did not move into suitable habitat in the southern part of the wood. There were no records from Maulden Wood during 2001-03, but a single male was heard singing there in May 2004.

Conclusion

In some cases, Lady Amherst's Pheasants in Britain have disappeared from sites which have apparently not changed radically since they supported a healthy population. Although environmental changes have certainly occurred at some sites, it is more likely that the decline as a whole reflects a combination of factors with which this highly specialised introduced species cannot cope. As a non-native species, further releases are prohibited by Section 14 of the Wildlife and Countryside Act 1981, and many conservation bodies consider the British population to be of no conservation concern (Gregory *et al.* 2002). It will take a considerable U-turn to prevent the almost certain extinction of this species in Britain and, in the absence of a more thorough understanding of its decline, that looks extremely unlikely. But there is no doubt that a male Lady Amherst's Pheasant is a stunningly beautiful creature, and part of its attraction to birders is that, because it is shy and skulking and lives in dark, dense woodland, it is so difficult to observe. It is hard to imagine that anyone who has been out at dawn and has been lucky enough to see this truly mysterious species would disagree that its disappearance from our countryside will be a significant loss.

Acknowledgments

I would like to thank Tim Sharrock, Sonnie Wing and Dave Odell for their help in covering some of the traditional sites in spring 2004, and Tim and Sonnie for their comments on an earlier draft. I would also like to thank Philip McGowan for his helpful input; Phil Cannings, who made some useful comments and provided data from the 1995-97 survey; Andy Harding, Michael Ilett and Norman Hallas for information about the current status in Buckinghamshire, Hertfordshire and Clwyd respectively; Alison Harding for arranging access to the library at the Natural History Museum, Tring; and Chris Andrew for access to the archives in Bedford Museum. In particular, I wish to thank Pat Cook for his comments, and for allowing me access to his unpublished report regarding the situation in Maulden Wood.

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Long-tailed Shrike:

new to Britain

Andrew Stevenson

ABSTRACT A Long-tailed Shrike *Lanius schach* was present at Howmore, South Uist, Western Isles, on 3rd and 4th November 2000. What was probably the same bird had been seen at nearby Howbeg on 27th October 2000. This constitutes the first record for Britain. The likely origins and racial identity of the bird are discussed.

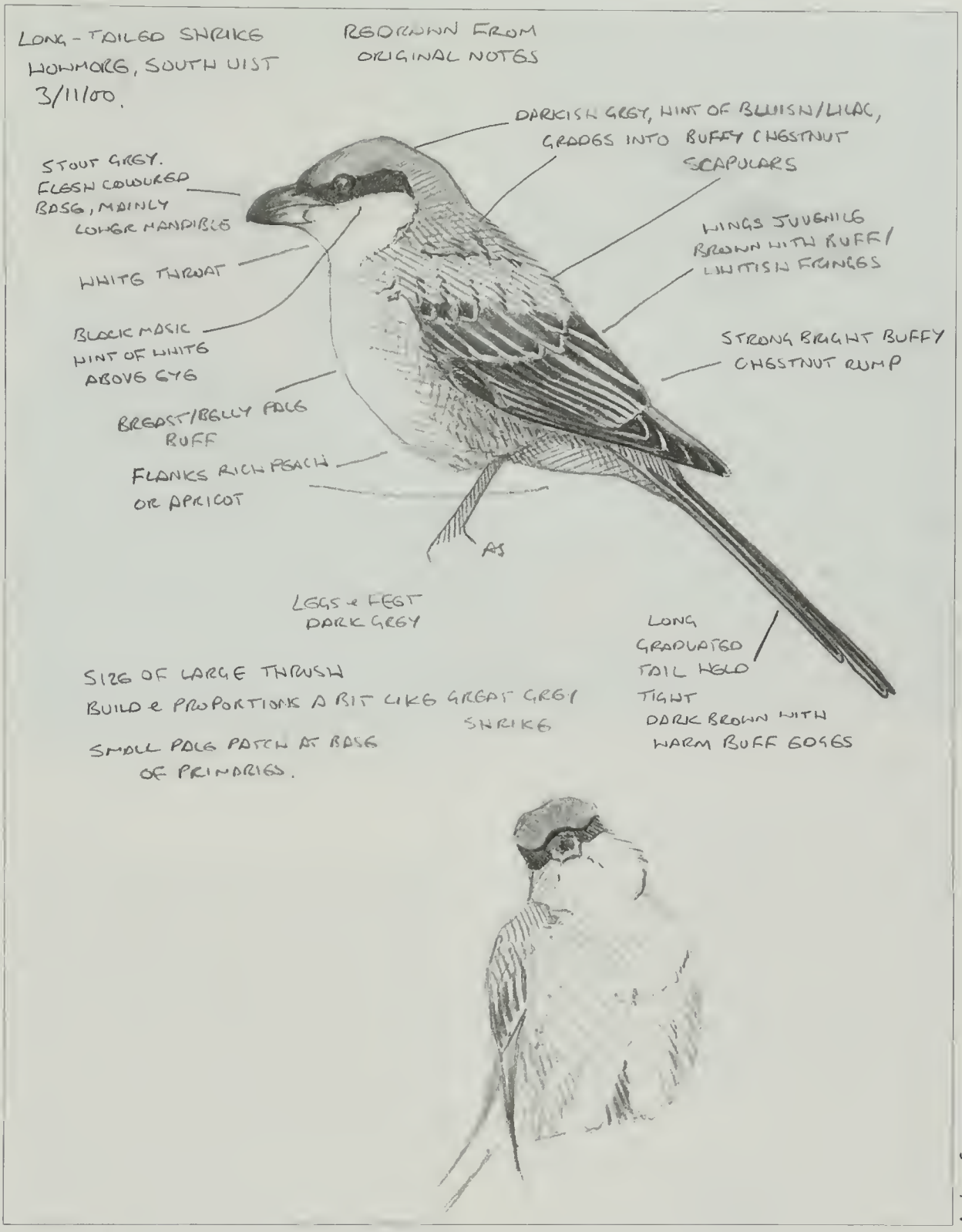


The Howmore Long-tailed Shrike *Lanius schach*. *Bill Neill*

The autumn of 2000, particularly October, brought an exciting mixture of vagrants and scarce migrants to northern and western Scotland. In Shetland, these included a Brown Shrike *Lanius cristatus* on Fair Isle on 21st October, while on the Outer Hebrides we had enjoyed vagrants of predominantly Nearctic origin, with an influx of American waders in the Uists, a Red-eyed Vireo *Vireo olivaceus* on Lewis, and a hotly debated female Hooded Merganser *Lophodytes cucullatus* on North Uist which, ultimately, was accepted onto Category D of the British List. As local birders contemplated what could be next to turn up, Jon Brain reported seeing what he thought was a male Red-backed Shrike *Lanius collurio* fly into a garden at the Howbeg road junction, South Uist, on 27th October. He saw it only briefly, at dusk, when returning home from a day's fishing, and his views were far from conclusive.

Red-backed Shrike is a genuinely scarce migrant on the Outer Hebrides, with fewer than 25 records at the time of writing. As most of these have been autumn records of juveniles, an adult male in late October seemed a little odd. I was due to leave the islands the following day but, as Howbeg is close to my home, I thought I would check it out. Unfortunately, I could not find the bird and I left South Uist for the ferry, stopping en route to watch the Hooded Merganser, where I mentioned the possible Red-backed Shrike to some visiting birders when they asked the age-old question of 'anything about?' When I returned to South Uist on 1st November, there had been no further reports of the shrike.

At 12.45 hrs on 3rd November, I was driving home from the office at lunchtime and, as I was passing a small deer-fenced plantation at Howmore, I noticed a large number of Redwings *Turdus iliacus* sunning themselves on the wires. As I slowed a little on my way past, another pale-fronted bird caught my eye. It clearly was not a thrush, so I pulled in just past the plantation for a second look. It was obviously a large shrike, but none of the obvious candidates fitted. The grey head with characteristic 'highwayman's mask' was fine, but the almost apricot tone to the underparts and



Andrew Stevenson

Fig. 1. Long-tailed Shrike *Lanius schach*, Howmore, South Uist, Western Isles, November 2000, redrawn from original field notes.

rufous back caused panic. I quickly phoned Gwen Evans, who at the time was RSPB officer for the Uists and lived close to Howmore, saying that I had found Jon's shrike, that I was not sure what species it was, and that she should come and see it as soon as possible! As I tried phoning other local birders, the shrike flew into some Gorse *Ulex europaeus* bushes, revealing a long, narrow tail, which had previously been hidden behind the fencing. This confirmed my previous, seemingly ludicrous, thoughts that it could be a Long-tailed Shrike *L. schach*, which I vaguely recalled was mentioned in Lewington *et al.* (1991). What followed was almost surreal. As I described the bird over the phone to a somewhat incredulous Angus Murray at 'Birdline Scotland', he confirmed the features of Long-tailed Shrike from Lewington

et al. as the bird fed on beetles by the roadside, within a few metres of where I sat, totally oblivious to the panic it was causing. Worse was to follow, as a Merlin *Falco columbarius* shot through and caught a bird close to where the shrike was feeding. At this point, only Gwen and I had seen the bird, and we had an agonising 10-15-minute wait, which seemed far longer at the time, before the shrike reappeared.

Later in the afternoon, the shrike moved to the area around the Howmore Post Office and nearby garage, where it remained through the following day, 4th November. Being a Saturday, that day saw the largest-ever one-day twitch to the Outer Hebrides, with over 130 people managing to see the bird, plus a number of locals (including the two local estate gamekeepers) who came along to twitch the twitchers, as well as the bird! The shrike spent much of the day in just one willow *Salix*, eating mice from a larder, before becoming quite active in the late afternoon. It was looked for again the following and subsequent days but was not seen again, and probably left the island on the clear frosty night of 4th/5th November.

Description

My initial description and sketches were taken on 3rd November, with the bird performing well on a calm, crisp, sunny afternoon, within the first hour of the sighting. During this time, the bird was also photographed. With hindsight and the opportunity to look at various photographs of the bird under different light conditions, I consider that bright, sunny weather heightened the plumage tones a little, perhaps leading me to over-emphasise the bright coloration of the bird in my description.

Size and structure

A large shrike, about the same size as a Blackbird *T. merula*, with a long, graduated tail, and a stout, deep-based, slightly hooked bill.

Plumage

The crown, nape and mantle were medium/pale grey with a lilac tinge, especially noticeable in bright light. The face showed the typical 'highwayman's mask', which was blackish on the lores but dark brownish on the ear-coverts. There was a thin whitish line between the mask and the crown, starting above the eye and fading out along the upper edge of the ear-coverts. A pencil-thin line of black extended across the forehead above the base of the bill. Although the throat was white, the rest of the underparts were warm, pale buff, deepening to a deep apricot or peach colour towards the flanks and breast-sides. One or two juvenile, crescent-edged, feathers were retained on the breast-sides, but these were typically obscured under the bend of the wing.

On the upperparts, the grey mantle merged with the rich rufous colour of the scapulars. The rump and uppertail-coverts were also a rich rufous. The wings were dark brown, with broad, faded-buff edges to most feathers, producing a faint bar across the tips of the greater coverts. At rest, a poorly defined, thin, pale buffish-white crescent was visible at the base of the primaries, but this was more obvious in flight. All these features suggested that the wing feathers were retained (unmoulted) juvenile feathering. The long, dark brown tail showed buff edging, and appeared rather narrow owing to the feathers being tightly held together.

Bare parts

The bill-tip was blackish, while the bill base was paler, grey, most obvious on the lower mandible. The eye was dark, and the legs dark grey in colour.

Age

Ageing the bird in the field proved straightforward, as it clearly showed the retained juvenile greater-coverts and remiges and some vestiges of dark barring on the sides of the breast. I was, however, slightly surprised to discover, when checking various reference sources, that some illustrations showed first-winter birds still in largely juvenile plumage. Initially, this caused some confusion as the Howmore bird was considerably more advanced. Subsequent checking revealed that, in fact, the moult from juvenile to first-winter plumage is often complete by autumn (Beaman & Madge 1999). Lefranc & Worfolk (1997) expanded upon this, stating that birds of the western form, *erythronotus*, undertake post-juvenile moult shortly after fledging, and this can be completed as early as the end of July, although most juveniles are still moulting in the second half of August, with some continuing to do so until early October. This fits much better with the appearance of the Howmore bird, and would suggest that it belonged to *erythronotus*, although there is an absence of data on the moults of other subspecies.

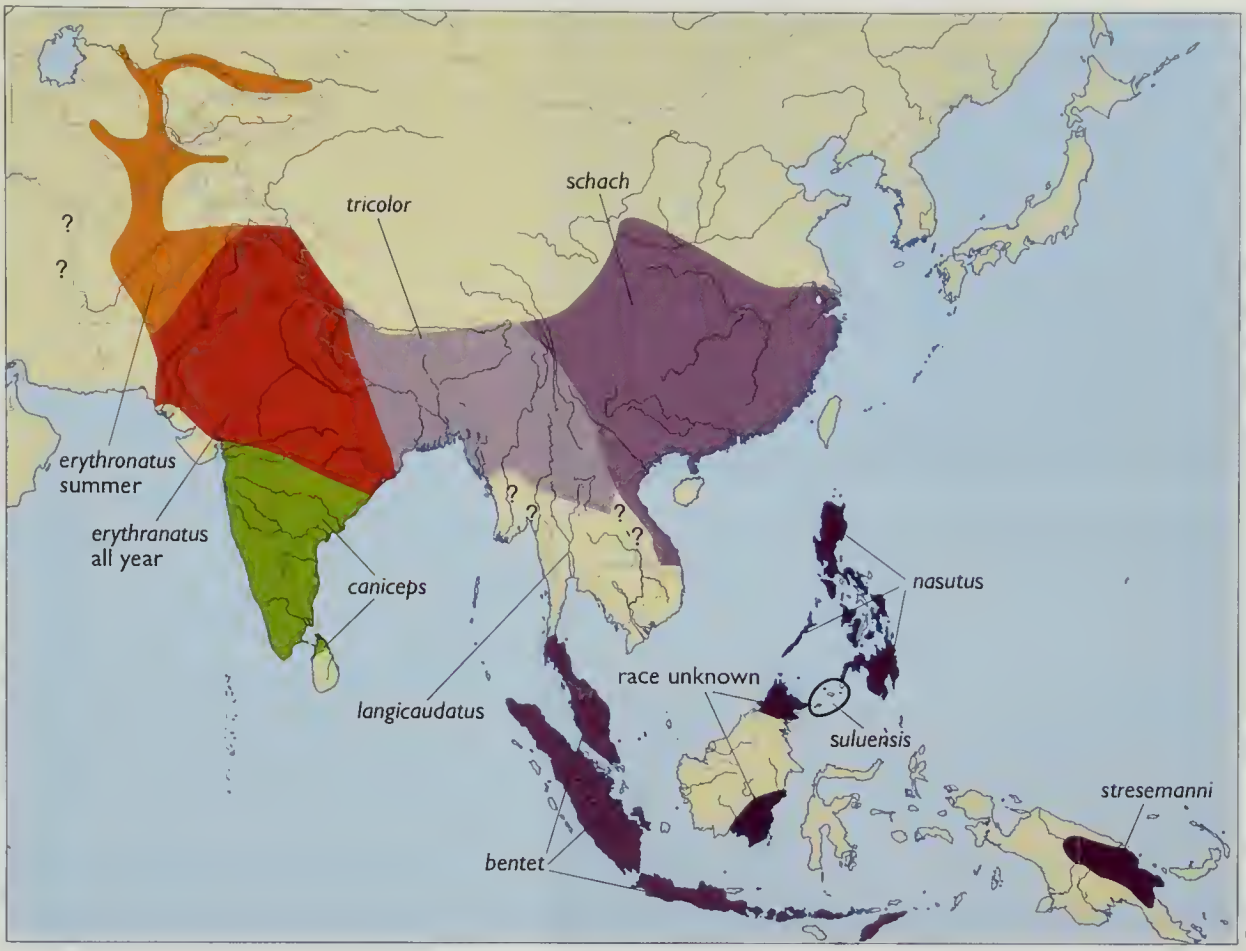


Fig. 2. The distribution of Long-tailed Shrike *Lanius schach*. Modified from that first published in Lefranc & Worfolk (1997), and reproduced with permission of the publishers, Christopher Helm/A&C Black.

Behaviour

During 3rd-4th November, the bird was often quite confiding and unconcerned by the crowd that had gathered to enjoy it. It was observed catching beetles as well as a Wood Mouse *Apodemus sylvaticus* and Short-tailed Vole *Microtus agrestis*. It also appeared to be quite settled in the area, with three larders discovered at sites up to 400 m apart, and was reported to have visited gardens in Howbeg, some 800 m away from the Howmore Post Office. All this suggests that it been present for long enough to have established a territory.

The racial provenance of the Howmore bird

At the time of the sighting, I was unaware of the degree of racial variation exhibited by Long-tailed Shrike. I quickly discovered that it is a wide-ranging and highly variable species, with no fewer than nine races described, although only one of these, *erythronotus*, breeds in the Palearctic, where it is strongly migratory (fig. 2). Based upon the description of *erythronotus* in Lewington *et al.* (1991), the Howmore bird appeared to fit this race closely, with two characters (the rufous extending onto the scapulars, and the extent of the peachy-buff wash on the underparts) strongly supportive of this subspecies. Furthermore, this form breeds west to the Aral Sea in Kazakhstan and was also considered responsible for the extralimital Western Palearctic records of Long-tailed Shrike (see below).

Subsequently, however, it transpired that racial identification of Long-tailed Shrike is not necessarily straightforward. The BOURC, after checking museum skins, concluded that the white line above the eye and the lilac tinge to the grey mantle are features more typically associated with the form *caniceps*, which is considered to be largely resident in southern and western India. Examination of a selection of specimens available at the National Museums of Scotland demonstrated that *erythronotus* can show individual variation, but rarely shows any white above the eye. The limited number of specimens of *caniceps* similarly showed individual variation, but the paler grey mantle and white above the eye were apparent on most individuals. It is worth emphasising that the white above the eye on the Howmore bird was a restricted and indistinct feature, and was largely invisible unless the bird was seen at close range;



Gwen Evans



Gwen Evans



Gwen Evans

8-10. First-winter Long-tailed Shrike *Lanius schach*, Howmore, South Uist, Western Isles, November 2000.

and also that there is clinal variation between adjacent mainland forms and that many individuals cannot be confidently assigned to any given subspecies (Ali & Ripley 1972; Lefranc & Worfolk 1997).

Given the above complications, it may not be possible to assign the Howmore bird with absolute certainty to one particular race. Given that *caniceps* is generally considered to be a fairly sedentary race, restricted to peninsular India (Ali & Ripley 1972; Cramp & Perrins 1993; Lefranc & Worfolk 1997), it seems most unlikely that it would have been of this form. Perhaps the most likely explanation is that greater individual variation exists within *erythronotus*, and that this can lead to some birds showing some characters suggestive of *caniceps*. What is certain, however, is that the Howmore bird arrived in northwest Scotland at a time when the migratory population of *erythronotus* that breeds in Central Asia was migrating to wintering areas in northwest India. This strongly suggests that the Howmore bird originated from within the range of *erythronotus*.

Migration

The migratory population of *erythronotus* breeding in Turkmenistan, Uzbekistan, Kazakhstan and Afghanistan winters to the southeast, in the Indian subcontinent. The nature of the migration is poorly understood, and there is little information available on the timing and routes followed. Post-breeding dispersal begins in early August, with passage through the northern parts of the range occurring mainly during September, while juveniles continue their migration into mid October. Stragglers have been noted as far northwest as Tashkent in early November (Cramp & Perrins 1993). It is interesting to note that, during migration through Kazakhstan, *erythronotus* mixes with Isabelline Shrike *L. isabellinus* of the races *phoenicuroides* and *isabellinus*, which are migrating to wintering areas to the southwest, in Arabia and East Africa, and to the southeast, in northwest India. The timing of migration through Kazakhstan coincides with that of Isabelline Shrike, although on average *phoenicuroides* migrates slightly earlier, and is a more abundant migrant than Long-tailed Shrike (Cramp & Perrins 1993). Given that the timing of migration and routes of Long-tailed and Isabelline Shrikes appear to be similar over at least part of the route, it is perhaps surprising that there have been so few Long-tailed Shrikes seen in the Western Palearctic, at least in comparison with the number of Isabelline Shrikes recorded.

Extralimital records

Within the Western Palearctic, Snow & Perrins (1998) quoted just three previous records, although one of these, a bird at Fehértó, Hungary, on 21st April 1979 is now considered to have been a hybrid between Woodchat Shrike *L. senator* and Lesser Grey Shrike *L. minor* (*Birding World* 12: 227). The other records they cite include an adult male which wintered at Sede Boqer, Israel, from November 1982 to February 1983, and a first-winter at Birecik, Turkey, on 24th September 1987 (specimen). More recently, a first-summer male was found on the Swedish island of Gotland on 11th June 1999 (*Birding World* 12: 227), and an adult was seen at Aqaba, Jordan, on 11th-13th April 2004 (*Birding World* 17: 153).

Other extralimital records of Long-tailed Shrike to the west of the breeding range include four in Oman (in February 1983, February 1984, December 1992 to January 1993, and January to February 1994) and three in the United Arab Emirates (September 1999, March 2003, and October 2003 to March 2004 at least). At the opposite end of the breeding range, two vagrants have been reported from Japan, well to the northeast of the breeding range of the nominate form in China.

Acknowledgments

I would like to thank Bob MacGowan for providing information relating to the subspecies of Long-tailed Shrike from specimens held in the bird collection at the National Museums of Scotland. Thanks also go to Jon Brain for his initial report of a probable Red-backed Shrike; without his initial report, this bird may not have been discovered.

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EDITORIAL COMMENT Colin Bradshaw, Chairman of the British Birds Rarities Committee, commented: 'With only one other record from northern Europe [see above], this species could not have been high on anybody's list of potential 'firsts'. The combination of grey head and mantle, contrasting with rich chestnut rump, tail and scapulars and apricot underparts makes this species distinctive in all but juvenile plumage. Bay-backed Shrike *L. vittatus*, a most unlikely vagrant breeding from southeast Iran to India, is the only species which is vaguely similar. A glance at plate 10 of Lefranc & Worfolk (1997) is ample demonstration of just how great the racial variation of Long-tailed Shrike can be. While the plumage features were not precisely those of a classic *erythronotus*, this is the most likely origin on geographical grounds.'

Eric Meek, Chairman of the British Ornithologists' Union Records Committee, commented: 'For birders hooked on vagrants from the east, the South Uist Long-tailed Shrike was one of the very best finds of recent years. The migratory race *erythronotus* breeds in that legendary part of Central Asia famed for adding exciting species and subspecies to the British List.

'The description and photographs left no doubt about identification at the species level but assigning this individual to a particular geographical race was somewhat more problematic. Some plumage characters were more indicative of the race *caniceps*, which has a more southerly distribution than *erythronotus* though is contiguous with it.

'Investigations by our cage-bird consultant, Roger Wilkinson, found no evidence of either *erythronotus* or *caniceps* being kept in captivity, although the nominate form *L. s. schach* is occasionally kept in captivity (but this is very rare). With a captive origin highly improbable, with the bird occurring on a likely date and in a likely locality for a wild vagrant, and with a good supporting cast of species of similar origin in Europe at the same time, members of the BOURC were unanimous in accepting the South Uist Long-tailed Shrike as the first for Britain.'

From the Rarities Committee's files:

A review of the identification of 'Balearic' Woodchat Shrike, and details of three British records

Brian J. Small and Grahame Walbridge

ZEISS

Woodchat Shrike *Lanius senator* was removed from the list of species assessed by BBRC at the end of 1990. At that time, with almost 500 accepted British records since 1958, it was occurring too frequently to warrant treatment as a rarity. In general, little attention was paid to the subspecific identity of those recorded, and few submitted descriptions distinguished between birds of the nominate form, breeding closest to Britain, and those breeding on the islands in the western Mediterranean, *L. s. badius* (hereafter referred to simply as '*badius*'). As part of the extensive and ongoing review of the status of various bird forms recorded in Britain, we consulted the rarity archive with the aim of finding and examining potential records of *badius*, of which there were a small number of claims. As BBRC had previously stated, however, that it was of the opinion that the characters of *badius* were not sufficiently well defined to distinguish it from some individuals of the nominate form (*Brit. Birds* 80: 563), our expectations were not high.

If *badius* had occurred in Britain, then a straightforward review of past records of Woodchat Shrike from the BBRC archives might reveal descriptions of individuals matching the features of *badius*. First of all, however, it was important to establish whether *badius* was reliably separable from other forms and, if so, to establish the key criteria by which it could be differentiated. Unfortunately, the treatment of *badius*, even in specialised literature, is frequently unsatisfactory (e.g. Lefranc & Worfolk 1997), and other sources (including Cramp & Perrins 1993) give a rather generalised account of the differences, the best of these being Argeloo & Meijer (1997). In view of this rather vague and imprecise treatment, BJS made a detailed study of specimens held at the Natural History Museum (NHM), Tring, in February 2002 and February 2004. This study was supported by field observations of *badius* in Mallorca and Corsica, and of other races in Portugal, Cyprus and Gambia between these dates. Furthermore, we also gathered data from a number of observers with experience of Woodchat Shrikes in areas of the western Mediterranean outwith the known breeding range of *badius* (including the Camargue, France, and the coasts of eastern Spain and western Italy). This information was vital if we were to establish whether regional variation within nominate *senator* was occurring, and whether birds from neighbouring regions exhibited any of the characters associated with *badius*. These investigations have resulted in BBRC gaining a much clearer understanding of the features by which *badius* may be identified, particularly in comparison with the most similar form, *rutilans*, which is largely restricted to southern Portugal

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Brian Small

Fig. 1. Woodchat Shrike *Lanius senator* of the west Mediterranean islands' form *badius*: male (left), female and juvenile (bottom).

(although, in fact, most Iberian birds appear to be more similar to *senator*).

Below, we present the results of our research, looking not only at the structural and morphological differences which should enable field identification of *badius*, but also at its status in Europe, on migration and in its wintering areas in West Africa. During the course of this study, using the criteria listed below, we have identified a further 15 previously undetected *badius* specimens at the NHM, Tring, from both wintering areas and migration routes. Although this process has taken some time, it has resulted in three British records being found acceptable, two of which were discussed by Corso (1997). BOURC has now accepted 'Balearic' Woodchat



Brian Small, © NHM, Tring

11. Woodchat Shrikes *Lanius senator* of the west Mediterranean islands' form *badius*. Top, female, Mallorca, April; middle, male, Ibiza, May; bottom, male, Ghana, December.



Brian Small, © NHM, Tring

12. Woodchat Shrikes *Lanius senator*. Top, male *L. s. rutilans*, Portugal, April; middle, male *L. s. senator*, Spain, May; bottom, male *L. s. badius*, Formentera, Balearic Islands, Spain, May. Note in particular the pattern of white at the base of the primaries, and the fact that it is much reduced or absent in *badius* compared with birds from the Iberian mainland.



Brian Small, © NHM, Tring

13. Juvenile Woodchat Shrikes *Lanius senator* of the west Mediterranean islands, form *badius*. Top, Tunisia, August; bottom, Balearic Islands' August. As with adults, note the lack of a white patch at the base of the primaries.

Shrike *L. s. badius* onto the British List, where it joins the nominate form *senator*. In addition, a juvenile in Shetland in September 2003 may yet prove to be the first British record of the eastern form *niloticus*, although this record is still being assessed.

Identification of 'Balearic' Woodchat Shrike

There are a number of plumage features, including the white bases to the primaries, extent of black on the forehead, and crown and underpart colour, which enable *badius* to be separated from other forms of Woodchat Shrike. In addition, structural features, including bill size and shape, wing formulae and possibly body mass, may also provide supporting evidence if a suspected *badius* is trapped and examined in the hand.

Plumage features

White at base of primaries

In general terms, it has long been understood that the best means of separating *badius* from other races of Woodchat Shrike lies in the absence, or virtual absence, of a visible white patch at the base of the primaries on the closed wing, adjacent to the primary coverts. Our investigations confirm this to be the case, and the absence of the extensive white patch of other races makes the wing of *badius* look quite strikingly different (plates 11 & 12). In reality, 60-70% of adults, both male and female, lack this white patch completely, while in the remaining 30-40%, it is restricted to a small spot at the base of the inner primaries (P7-P10, primaries numbered ascendantly). Even on these individuals, the white at the base of the primaries never extends beyond the tip of the longest primary covert – a comparison might be made here with the differences between the limited white patch at the base of the inner primaries of adult Pied Flycatcher *Ficedula hypoleuca* and the obvious white patch extending far beyond the primary coverts of adult Collared Flycatcher *F. albicollis*. Immatures are also distinct, lacking the pale creamy-white base to the primaries visible on other races (plate 13).

In other forms of Woodchat Shrike, this white patch is generally obvious, but care is needed to ensure that it is not obscured by

dislodged secondaries hanging over the inner primaries. In nominate *senator*, the depth of visible white at the base of the primaries is extensive, varying between 7.5 and 10.8 mm on adult males (personal measurements, though *BWP* gives 7-12 mm, while Vaurie (1955) gave a range of 10-16 mm beyond the primary-covert tips). Birds in southwest Iberia, belonging to the form *rutilans*, often show a restricted white patch on the closed wing, particularly on the outer primaries; indeed, the white patch can even appear to be entirely absent but in reality it is merely hidden by secondaries which hang over the inner primaries. This feature is apparent both on skins and in the field. In the eastern Mediterranean, *niloticus* exhibits the greatest amount of white, this extending some 17-21 mm beyond the primary coverts (Vaurie 1955). In flight, the restricted white patch on *badius* produces a narrow white bar across the inner primaries, which is quite unlike the broad and extensive white bar visible on the primaries of *senator*, *rutilans* and *niloticus* (compare photographs in Jenni & Winkler 1994 and Corso 1997). The maximum extent of white that has been recorded at the base of the primaries on *badius* is shown by a specimen from Nigeria held in the NHM, Tring (specimen no. 1966.16.5694), dated 25th February 1953. This has a buffy-white patch restricted to P6-P10 that reaches to, or just beyond, the primary coverts. Bill measurements confirm its identity beyond doubt as *badius*.

The limited amount of white at the base of the primaries gives the wing of *badius* a darker appearance. When the wing feathers are fresh, narrow pale fringes are present on the coverts, tertials and secondaries, but these are lost as the wing abrades, further enhancing the darker appearance, although the impression of a darker wing is apparent even on quite fresh birds. By early April, the absence of white fringes to the coverts is often quite marked, and on many specimens such fringing is restricted to neat white tips to the tertials and secondaries. By late May and June, these fringes may have worn off completely. Compared with other races of Woodchat Shrike, the more limited pale fringing on *badius* is obvious in the field, making the entire wing look comparatively dark. It should be noted, however, that the first Dutch record, in June 1983, showed quite prominent pale fringes to the greater coverts (Ebels 1997), and this is a variable feature that, on its own, cannot be used for identification purposes. Nonetheless, the retention of whitish fringes to the coverts, tertials and secondaries later in the spring and early summer is more typical of other forms and, coupled with the large white patch at the base of the primaries, produces a wing that appears less black (though the feathers are in fact equally dark).

A supporting feature of *badius* examined in the hand is the amount of white on the underside of the primaries. The reduced white at the base of the upperwing primaries is mirrored on the underwing. It is restricted to a narrow white triangle on the basal fringe of the inner web of the primaries, which, on P2, broadens towards the base, but never meets the shaft before the tip of P1. The amount of white on the underside of the primaries of nominate *senator* is more extensive than on *badius* and meets the shaft at the tip of P1, while on *niloticus*, the white patch is squared off and more extensive still. The greater extent of white on *senator* and *niloticus* has the effect of producing restricted dark tips to the primaries and the white patch may be visible in flight, as it is on the upperwing, as a broad white wing-bar.

It has been suggested that only those birds trapped or collected within the breeding range of *badius* lack white on the primary bases, perhaps implying that birds which show this feature outside the breeding range could be intergrades, or are from other populations in which such variability is unknown and undocumented. Our research at the NHM, Tring, has revealed, however, that a number of specimens from the wintering grounds in West Africa also lack white on the primary bases. These include birds from Nigeria (14), Ghana (7), Mali (2), Sierra Leone (2), Ivory Coast (1) and Liberia (1). Other African specimens are also attributable to *badius*, and are probably the birds mentioned in Cramp & Perrins (1993) from North Africa, for example a Meinertzhagen specimen from Algiers, 29th March 1931 (1965.M.10169), and two immatures from Tunisia in August (one is specimen 1939.12.9.708). There is also one specimen from Morocco, plus another Meinertzhagen specimen (a male) taken in Gibraltar in March. In total, we found 48 specimens of *badius* at the NHM: 16 from Europe (including 15 collected on the breeding grounds and one on Gibraltar) and 32 from Africa (five from North Africa and 27 from wintering areas or on passage south of the Sahara).

Narrow black forehead

Compared with other races of Woodchat Shrike, *badius* shows a narrower black forecrown band. This appears to be a consistent feature on all the specimens examined, and is observable in the field. There is, however, some variability and the presence of a narrow black forehead band may be indicative of *badius* rather than diagnostic. The figures quoted in Cramp & Perrins (1993) for the forecrown band are in the range 5-8 mm in male *badius* (mean 6.5 mm) and 8-14 mm in other races (mean 10.2 mm). Argeloo & Meijer (1997) gave a mean depth of 8.8 mm in *badius* and 10+ mm in other subspecies.

Crown colour

The reddish-brown colour on the rear crown and hindneck of Woodchat Shrikes is common to all races. In male *badius* (and possibly females), however, this tends to be rather paler than is found on other races, appearing as a more washed-out orange when compared with the deep chestnut of *senator* and *niloticus* (*contra* Clement 1995); in Portuguese *rutilans*, though, the crown is of a similar colour and tone to that of *badius*.

Underparts

Contrary to statements in the literature, the underparts of *badius* are not diagnostically whiter than those of nominate *senator* and *niloticus*. They may lack the orange-buff wash of many *senator*, but specimens of *rutilans* from Portugal and many *niloticus* show similarly white underparts.

Structure

Bill

In profile, the size and structure of the bill is notably different from that of *senator*: *badius* has an almost 'square', deep-based bill, compared with the slimmer, less chunky bill of the nominate race. Whether these differences are easily assessed in the field has been questioned, but our field observations, detailed examination of photographs and the study of specimens suggest that they can be (see plates 14 & 15). At least three of the extralimital records of *badius* (from Norway, The Netherlands and Ireland) involved notably large-billed birds. Similar differences in bill structure in other species of shrike are relatively easy to assess in the field; for example, in eastern Asia, the large-billed Tiger Shrike *L. tigrinus* has a noticeably dif-





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14 & 15. Woodchat Shrikes *Lanius senator*. Plate 14: top, male *L. s. badius*; middle, male *L. s. rutilans*; bottom, male *L. s. senator*. Plate 15, all *L. s. badius*: top, juvenile female, Nigeria, January; middle, female, Mallorca, May; bottom, male, Mallorca, May. Note the markedly deep bill of *badius*, which is particularly evident in plate 14 when compared directly with *rutilans* and *senator*.

ferent bill structure to that of the slimmer-billed Brown Shrike *L. cristatus*. In the hand, bill shape should certainly support the more obvious features. We can only speculate as to the reason for the bill of *badius* being significantly bigger than that of *senator*, though this seems most likely to be related to diet on the breeding or wintering grounds.

Measurements of 20 specimens of *badius* and *senator/rutilans* at the NHM, Tring, gave bill depths (measured at the distal end of the nostrils) in the range 7.9-8.9 mm (mean 8.6 mm) for *badius* and 6.3-7.6 mm (mean 7.1 mm) for *senator* and *rutilans*. Bill length is less important, although *badius* is slightly longer-billed on average than *senator*; ten *badius* measured 10.9-12.4 mm (mean 11.7 mm) from the bill-tip to the proximal edge of the nostril, while the comparable measurements of ten *senator/rutilans* from Iberia were 9.9-11.4 mm (11.0 mm; fig. 2).

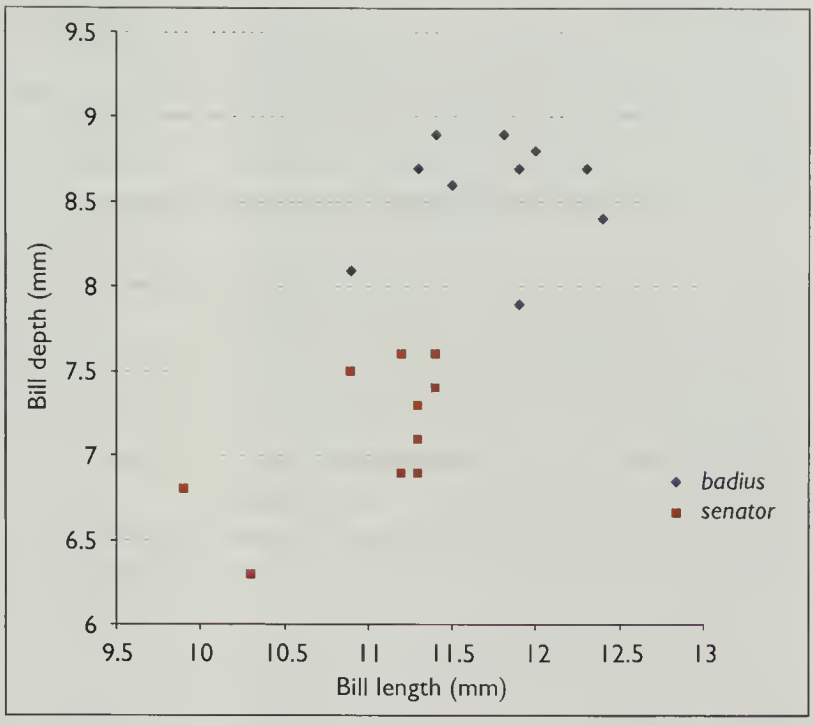


Fig. 2. Comparison of bill measurements of Woodchat Shrike *Lanius senator* of nominate form *senator* (from Spain and Portugal) and the west Mediterranean islands' form *badius*. Measurements by BJS from specimens held at the Natural History Museum, Tring. Bill length is measured to proximal edge of the nostril, and bill depth measured at distal edge of the nostril. Note that bill length of *badius* is only slightly longer than that of *senator*, but that bill depth of *badius* is noticeably greater.

Wing

Subtle differences in wing structure are evident among the races of Woodchat Shrike, being most apparent in the relative positions of the tips of P2 and P5. In *badius*, P2 usually falls level with P5, while in *senator*, the tip of P2 falls between that of P5 and P6, and usually closer to P6. This is a result of *senator* having a longer P5, which lies closer to the wing-point, so that the primary tips appear to be evenly spaced and quite closely bunched together. In *badius*, however, the primaries are more widely spaced, with the distance between P5 and P4 being greater than that between P4 and the wing-point, which is formed by P3. Wing length itself is not a discriminatory feature, although *badius* has, on average, a marginally longer wing than *senator*. Cramp & Perrins (1993) give the wing length of 13 male *badius* from the Balearic Islands as 100-106 mm (mean 102.8 mm), and of four females, also from the Balearics, as 100-103 mm (mean 101.2 mm). Wing length of *badius* from Corsica averages slightly shorter, mean 100.4 mm in males (n=13), and 99.6 mm in females (n=8). Svensson (1992) provided a slightly wider range for *badius*, 98-106 mm, although this includes birds of both sexes and all ages. In comparison, Cramp & Perrins (1993) present the wing lengths of 24 male *senator* from western Europe as 98-102 mm (mean 100.5 mm), and for 11 female *senator* as 97-103 mm (mean 99.7 mm). Svensson (1992) gave wing lengths of 91-102 mm for *senator* and *rutilans* combined, although again this encompasses birds of both sexes and all ages, and is based upon specimens measured throughout the range of these races. These measurements are virtually identical to those of *badius* from Corsica (91-102 mm for males and females combined; Svensson 1992).

Weight

Although there are few comparative data on the weights of the various forms of Woodchat Shrike, in the field *badius* can give a bulky and large-headed appearance, which, together with the large bill, may be quite noticeable.

Intergradation

Despite the fact that *badius* regularly overshoots the islands in the western Mediterranean in spring, it appears that intergradation between *badius* and *senator* has never been confirmed (A. Corso, P. Dubois, J. del Hoyo pers. comms.). In the past, concerns have been expressed about intergrades between *badius* and *senator* (Hartert 1903-1910; Streseman 1920; Hope Jones 1966), with records outside the known breeding range not being treated as *badius*. Detailed observation of birds in the field, combined with examination of skins and the comments of many other observers with experience in the Mediterranean basin, has failed to provide any evidence that birds with intermediate characters exist. At the NHM, Tring, no specimens of any race other than *badius* showed the absence, or virtual absence, of white at the base of the primaries diagnostic of the Balearic race, although two young juveniles from southern Germany, collected in July and still growing their primaries, lacked a pale area at the base of these feathers. It may well be that extralimital records, i.e. birds outside the breeding range of *badius*, or specimens of Woodchat Shrike showing limited white at the base of the primaries, were simply assumed to be intergrades. We believe that these supposed intergrades are more likely to be typical *badius*, either on migration to and from the wintering grounds or overshooting during the spring, occurring within the normal range of *senator*.

Distribution

The breeding range of *badius* is restricted to the Mediterranean islands between Spain and Italy, ranging from Ibiza in the west to Corsica and Sardinia in the east. This race is, however, frequently recorded along the coasts of France, Italy and, less regularly, Spain, particularly in spring when migrants overshoot the breeding islands. There are also a small number of autumn records of both adults and immatures in mainland Italy. We contacted ornithologists in Italy, France and Spain to augment our observations and help us provide an up-to-date picture of the occurrence of *badius* in these countries.



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Fig. 3. The distribution of Woodchat Shrike *Lanius senator*. Modified from that first published in Lefranc & Worfolk (1997), and reproduced with permission of the publishers, Christopher Helm/A&C Black.

Italy

In Italy, *badius* breeds extensively throughout Sardinia, where there is a large and healthy population, unlike the declining *senator* population in most of mainland Italy. Outwith Sardinia, *badius* is known exclusively as a passage migrant, primarily in spring, along the Tyrrhenian coast. Migrants occur regularly on the islands of Capri and Ischia, and the Pontino (including the islands of Ventotene, Zannone, Ponza, Palmarola) and Tuscan archipelagos

(including the islands of Capraia, Gorgona, Giannutri, Montecristo and Giglio). It is believed that those individuals which stop over on these islands probably continue to Sardinia and Corsica. Arrival dates show that *badius* appears on the breeding grounds, on average, ten days earlier than *senator*, and this is supported by observations along the Tyrrhenian coast (Fraticelli 1984; Fracasso *et al.* 1995).

In recent years, however, breeding pairs have been found on islands off the Tuscany coast, including Elba and Capraia. These birds may have expanded their range from nearby Corsica, which is visible from these islands on clear days. Occasionally, in Tuscany and Lazio, adult male *badius* have been observed singing in suitable habitat in late May and June, and sometimes into July. Although breeding has neither been reported nor confirmed on the mainland, it is possible that single pairs may breed in the Tolfa Mountains, north to Rome. In Sicily, *badius* is extremely rare away from the west coast, where wandering post-breeding/post-juvenile dispersal probably accounts for the majority of records. There is, however, a single breeding record from Favignana Island, Egadi, western Sicily, in 1987.

Between 1988 and 1992, as part of a migration study programme conducted in the 'Progetto piccole isole', encompassing the islands of Giannutri, Capraia, Montecristo, Ventotene and Capri, 1,716 Woodchat Shrikes were caught between 15th April and 15th May. This study established that *badius* and *senator* were occurring in roughly equal numbers in the northern islands of Montecristo, Giannutri and Capraia, with 48.6% of all Woodchat Shrikes there being *badius*. On the southern islands of Ventotene and Capri, a higher proportion of birds were *senator*, with just 14.5% being *badius*. In both subspecies, males migrate before females and immatures.

France

On Corsica, *badius* is relatively common throughout the island, preferring rough, open grassy landscapes, with scattered bushes and stone walls or buildings, frequently near cultivation. Along the mainland Mediterranean coast of southern France – most notably in the Camargue region – *badius* is a relatively frequent visitor. Arrivals start to appear from the end of March and continue until late May, but there is at least one August record. Recorded annually, as many as 25% of Woodchat Shrikes trapped here are *badius*; Cramp & Perrins (1993) give an average of 16% *badius* (37 out of 232 birds trapped over a four-year period). There are also two extralimital records from northern France, in 1995 and 1999.

Spain

In the heart of its breeding range, *badius* is a common breeder and migrant on the Balearic Islands. Being a long-distance migrant, *badius* would be expected to overshoot its breeding islands. Although this is the case, with birds reaching northeast Spain in spring, it is an exceptionally rare migrant there, and reports from the Spanish mainland require supporting documentation for acceptance by the Spanish Rarities Committee. In fact, Cramp & Perrins (1993) note just three records of *badius* in northeast Spain in early August, while just four records of *badius* exist for Catalonia (in 1982, 1985, 1991 and 1993), and one for Valencia (in 1989); these two provinces are those closest to the Balearic Islands. There are, however, at least three recent records: two from the Ebro Delta, on 16th April 1998 and 5th May 2003, and at the Llobregat Delta, Barcelona, on 20th April 2003.

Movements and wintering

During autumn migration, *badius* Woodchat Shrikes head almost directly south of their breeding range to winter in West Africa. Lefranc & Worfolk (1997) gave the main wintering range of *badius* as extending from the Ivory Coast east to Nigeria. Subsequently, Borrow & Demey (2001) provided a slightly more accurate picture, describing the wintering range as extending 'at least from Ivory Coast to northern Cameroon'. Cramp & Perrins (1993) also include Chad and Cameroon within the wintering range of this race, and this is supported by the collection at the NHM, Tring, which includes specimens from Sierra Leone in the west (2) to Nigeria in the east (14). In these areas, Cramp & Perrins (1993) state that it 'sometimes outnumbers nominate *senator*, e.g. in southern Nigeria and coastal Togo'. There are also specimens at Tring from Mali during the winter months but, like *senator*, which sometimes arrives late in the winter (January), these may still be passage birds.

Although *badius* migrates across North Africa in both spring and autumn, records from

this region are relatively scarce. Cramp & Perrins (1993) provide some indication of its passage status, referring to studies along the Moroccan/Algerian border in spring: at Figuig, on the northern edge of the Sahara, just 1.3% of 316 Woodchat Shrikes trapped were *badius*; at Monts des Ksours, no comparative figures exist, but both *badius* and *senator* occurred and both forms were trapped. In northeast Morocco, just four of 300 Woodchats trapped were *badius*, while in Tunisia, just 2.6% of c. 3,000 Woodchat Shrikes ringed were identified as this race (A. Corso *in litt.*). At Gabes, in southeast Tunisia, the proportion of *badius* trapped was around 2% (over 3,000 Woodchat Shrikes trapped in spring over a three-year period; Cramp & Perrins 1993). In addition, two specimens at the NHM are from Tunisia in autumn, a female and an immature, and there have also been recent sight records from Tunisia in autumn (e.g. 2003). At Cap Bon, Tunisia, one *badius* ringed in spring was recovered at the same site in the autumn (Cramp & Perrins 1993), suggesting that at least some birds follow the same route between breeding and wintering areas in spring and autumn (even though there is a general tendency for spring migrants to move north on a track to the east of the one used in autumn). In Malta, ten *badius* were recorded between 1969 and 1978 during spring passage, with up to 45 Woodchat Shrikes recorded per day (Cramp & Perrins 1993).

Extralimital records in northern Europe

Extralimital records of *badius* in northern Europe are few, though it is likely that this race occurs more frequently than the available records suggest. An intriguing record from Norway concerns a juvenile male on Utsira, Rogaland, on 26th September 1972, which remained until 29th September when it was trapped and collected (Ree 1976). Two records from The Netherlands, at Knardijk on 5th June 1983 (Ebels 1997), and near Voorhout on 6th June 1993 (Argeloo and Meijer 1997), were belatedly accepted when the field characters of *badius* became better understood. In both cases, the identification was established beyond doubt by good photographs taken at the time. Two recent records from northern France involve single birds at Conan, Loir-et-Cher, on 4th June 1995, and at Beillé, Sarthe, on 12th August 1999 (P. Dubois *in litt.*). There is a recent report from Ireland, which is currently under review.

Records of badius *in Britain*

Our examination of the descriptions and photographs of Woodchat Shrikes in the BBRC archives has established that three British records described individuals showing the characters associated with *badius*. These are:

- Male, Portland, Dorset, 10th May 1986;
- Male, Great Cressingham, Norfolk, 2nd-6th July 1995;
- Female, Dungeness, Kent, 15th-21st July 1995.

Details of these first three records are presented here in appendices 1-3. The first British record, at Portland, was not photographed, but was particularly well described, much to the credit of the original observers who, at the time, believed it to be of the race *badius*. Good photographs of the second record, at Great Cressingham in 1995, have established its identity beyond doubt but, owing to it being regarded at the time as 'just another Woodchat', it was not seen by many. The Dungeness bird, also in 1995, was identified as *badius* by the finders.

Highlighting the need for care, a Woodchat Shrike in Gwent, in August 1993 was flagged up as a putative *badius* by Corso (1997) on the basis of published photographs. Examination of further photographs, however, showed that the impression of reduced white at the base of the primaries was an artefact of the secondaries hanging over the primary bases, and that there was, in fact, a large amount of white at the base of the primaries, typical of other forms.

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Appendix 1. Details and description of the Dorset badius

At 10.40 hrs on 10th May 1986, A. G. Clarke, C. D. & V. A. Head and S. I. Jones visited the cliffs at The Grove, on the northeast side of Portland, following a report of two European Bee-eaters *Merops apiaster* there. On arrival, AGC immediately noticed a passerine perched on scrub some 15-20 m from the car, beside the footpath that leads down from the clifftop to the disused railway below. On looking at the bird through binoculars, he identified it straight away as a Woodchat Shrike, a species with which he was familiar, and brought it to the attention of the others, all of whom agreed with his initial identification.

Earlier that morning, they had seen a long-staying first-summer Woodchat Shrike at the Bill and were able to make comparisons with that individual; their bird was clearly an adult male, being overall much brighter in plumage and lacking the paler areas in the face. Unfortunately, after just two minutes, the bird was lost to view so they decided to return to the Bill and alert others to its presence. Having conveyed the news, they returned to the site along with about fifty observers, including M. Cade, D. J. Holman, J. F. Ryan and G. Walbridge.

Finally, at 13.30 hrs, the bird was relocated, about 250 m from where it was originally found, frequenting an area of dense hawthorn *Crataegus* and Blackthorn *Prunus spinosa* scrub in the vicinity of the sewer pipe on the seaward side of the railway line. It was originally observed from the clifftop and so views were rather distant, but MC in particular commented on the apparent absence of any white to the primary bases (a feature clearly present on the bird seen earlier at the Bill). Several observers, including GW, made their way down the undercliff footpath, from where they were able to gain much closer and prolonged views as it performed regular feeding sallies from the tops of the scrub. These closer views confirmed beyond all doubt the absence of white in the remiges. On return to the Observatory, a literature search revealed that this feature strongly suggested the bird belonged to the form *L. s. badius*, and it was tentatively identified as belonging to this form. All those present were happy with the identification. Although the bird remained faithful to the area for the remainder of the day, there was no sign of it on the following day, 11th May.

The following description is a combination of notes made at the time by AGC, CDH, DJH and GW. Crown and nape rich chestnut-orange down to eye level. Black forehead and mask extending to rear of ear-coverts. A small pale spot in loral area. Mantle black, paling to charcoal black. Scapulars white, forming obvious large oval-shaped patches. Wings entirely black with no white visible; in particular, no white to primary bases either at rest or in flight. Rump white. Tail black save white outers and tips. Underparts appeared mostly clean white but closer views revealed a delicate pink flush to the breast. Stout black bill typically hooked at tip. Bird fed on insects by making regular sallies from exposed perches. Also seen to wag its tail slowly up and down in typical shrike fashion.

Appendix 2. Details of the Norfolk badius

On the evening of 2nd July 1995, Andrew Goodall was approaching the crossroads on the Peddars Way footpath at Great Cressingham when he noticed a bird perched prominently on top of a thin hawthorn whip. Visibility was initially poor, owing to heavy black rain clouds, and allowed only sil-

houetted views. Even in rather poor light, the combination of its pied appearance and posture suggested it was something unusual.

Having made several trips to Menorca, AG soon recognised the bird as a Woodchat Shrike, a species he had often encountered there. In order to gain better views, he walked past the bird and looked back, the light now to his advantage. With improved views, AG ascertained that, like the Menorcan birds, this individual lacked a white patch to the bases of the primaries. The bird remained in the area until 6th July, during which time it was photographed (see *Birding World* 8: 248).

Appendix 3. Details and description of the Kent badius

Late on the morning of 15th July 1995, David Walker was standing in the Observatory garden at Dungeness, enjoying a cup of tea with friends, when he became aware of Common Whitethroats *Sylvia communis* giving repeated alarm calls about 100 m away. Looking in the direction of the disturbance, and expecting to find a Common Cuckoo *Cuculus canorus* being mobbed, DW was surprised to see an adult Woodchat Shrike. The bird gave excellent views in the Moat near the Observatory before flying across the shingle to an area known locally as 'the Desert', where it remained until 21st July. During this period, it was seen by a steady procession of some 500 birders.

DW noted that the bird lacked the white patch at the base of the primaries and, on consulting available literature, suspected it belonged to the form *L. s. badius*. In order to confirm the absence of this feature, DW and W. Attridge erected a couple of mist-nets and caught the bird with ease. The bird was taken to the Observatory where it was ringed, examined and photographed (plates 16 & 17). Detailed examination in the hand confirmed the absence of an obvious white wing-bar, although there was a small amount of white at the base of primaries 7, 8 and 9 (primaries measured ascendantly). In addition, it was noted that the bird exhibited white underparts, atypical of the nominate form. The bird was sexed as a female on the basis of the crown colour being a mixture of orange and buff, a poorly defined border between the black forehead and orange crown, the pale lores and the extent of grey in the rump.

Since the identification was established beyond doubt, and Woodchat Shrike was not then a national rarity, a detailed description was not taken, but the bird was photographed. Measurements revealed that the width of the black forehead band was 8.5 mm, the wing length was 104 mm, and the bird weighed 46.2 g. Subsequent examination of the photographs revealed that the tip of P2 fell level with that of P5, which is typical of *badius*; as described above, P2 is usually closer to P6 in nominate *senator*.



David Walker



David Walker

16 & 17. Adult male Woodchat Shrike *Lanius senator* of the west Mediterranean islands' form *badius*, Dungeness, Kent, July 1995.

Letters

Petrels around Madeira

Andrew Harrop's paper on the 'soft-plumaged petrel' *P. madeira/feae/mollis* complex (*Brit. Birds* 97: 6-15) and Ian Wallace's letter in response (*Brit. Birds* 97: 349) prompt the following. The phrases that struck me in Harrop's paper were 'rare and genuinely enigmatic' and 'given the effort required to obtain good views'. These seem to me unduly pessimistic. In August 2003, I went on holiday to Madeira with my wife, on what she insisted was not to be a bird-watching holiday. Nevertheless, we did fit in a day trip to Porto Santo on the commercial ferry and a day trip to Gran Desertas on the yacht *Ventura do Mar*.

I am not a dedicated seawatcher, but I know that my experience of seawatching in Madeira was wholly different from what would be expected on UK pelagic trips. As soon as we cleared the harbour (and breakfast) on the ferry, I raised my binoculars and picked up a Bulwer's Petrel *Bulweria bulwerii*. The crossing takes about two hours, and there was rarely a minute when birds were not in view. As a single observer, I picked up several Fea's/Zino's, many Bulwer's, Cory's Shearwaters *Calonectris diomedea* and, as it got dark, a Madeiran Storm-petrel *Oceanodroma castro* near the ship. On the yacht trip there were other, more acute, observers, who managed higher numbers of all species and also spotted a White-faced Storm-petrel *Pelagodroma marina*. A Swedish bird-watcher had spent hours watching from headlands and achieved high counts, but of distant birds. Finally, my wife and I also went with an organised group to the breeding area and heard Zino's call. My criticism of Harrop's paper is that it omits to commend to bird-watchers to get experience with these species and enjoy the other delights of Madeira. The Madeiran economy depends heavily on tourism, and the effort required to enjoy the food, gardens and scenery, as well as the bird-watching is amply repaid.

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'The Chalice petrel' revisited

As one of the lucky observers who actually saw 'the *Chalice* petrel', I approached the recent review (*Brit. Birds* 97: 336-345) of that frustrating record with rueful curiosity. I served as a kind of twelfth man on that trip; the combination of chum, diesel fumes and constant motion is a potent one for wimpish landlubbers, so I had spent most of the voyage wondering whether the prize of a Wilson's Storm-petrel *Oceanites oceanicus* was really worth 36 hours of more or less continuous retching. It had been a longish day with relatively little action (sightings of Wilson's Storm-petrel aside). But all of that was forgotten when, at about 18.00 hrs, this extraordinary bird appeared behind a French long-line trawler. It made a number of close-range passes, as the photographs attest. It led us quite a dance, suddenly materialising astern and then disappearing from view for what seemed like an age, though it was probably only half a minute. It absolutely dwarfed the accompanying European Storm-petrels *Hydrobates pelagicus*, and the photos, a remarkable achievement though they are, given the swell and the scrambling excitement, convey a misleading idea of the relative size difference. In the one where they are in the same frame (plate 194), the two species are at opposite ends of the image.

The analysis offered by Martin Garner and Killian Mullarney is convincing on the page. The logic of their arguments is cogent, the account of the 1999 record off North Carolina seems to offer such effective support, while the accompanying ID parade of Tring specimens (plate 199) appears to clinch their case. The enhanced illustration (fig. 1), by one of the two master illustrators of the *Collins Bird Guide*, looks magnificent. I would not blame any reader for concluding that they had provided a solution to the puzzle of this bird's identity. Everything points so neatly in the same direction that I can almost persuade myself that it was a Swinhoe's Storm-petrel *Oceanodroma monorhis*.

And yet, I was there – and their answer doesn't fit with my gut sense. In these situations, it is generally valuable to go back to one's first impressions. Peter Harrison, whom they acknowledge as 'arguably the most authoritative seabird expert of the day', first called it a Bulwer's Petrel *Bulweria bulwerii*. After the bird had made a couple of passes, we realised that it had a forked tail and he changed his claim to Tristram's Petrel *O. tristrami*. I had never seen either species (and still haven't), but Harrison had and, moreover, had huge experience of identifying seabirds in the challenging conditions of being at sea. He is, after all, the author of two standard textbooks on world seabird identification, which were at that time recently published. Both Bulwer's and Tristram's are a whole size bigger than Leach's, which is why he so immediately opted for the larger category. Garner and Mullarney are seeking to persuade us with a species that is actually smaller than Leach's Storm-petrel *O. leucorhoa*, even though, as they cautiously word it, it 'has become increasingly evident... that Swinhoe's... is liable to be perceived in the field as a larger bird than Leach's'. Moreover, it had very long wings (yes, like a European Nightjar *Caprimulgus europaeus*) while the lone Swinhoe's off North Carolina in plates 204 & 205 looks altogether chunkier to my eye.

Harrison has been consistent in stating that this bird was considerably larger than any Leach's. I think that his account of the events and his readiness to change his identification are admirable. It now seems unlikely that the issue will ever be officially resolved, unless there is a remarkable development in our knowledge. Perhaps I can sum up my case with an enhanced illustration of my own: it was like watching a Hobby *Falco subbuteo* among House Martins *Delichon urbicum* – and by this analogy a Swinhoe's might correspond to a Common Swift *Apus apus*. The *Chalice* petrel passed within 20 m of us at one point; I'm reluctant to be persuaded, even after 15 years, that we were dealing with a 'souped-up' Leach's. Whatever its true identity, it was an unforgettable encounter.

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Yet more dangers in photographs, size estimates and enhanced images

At the risk of again committing the sin of being disingenuous (see *Brit. Birds* 97: 350), I have to raise an eyebrow at what Martin Garner and Killian Mullarney have made of 'the *Chalice* petrel' (*Brit. Birds* 97: 336-345). They persuade me that it was not any kind of 'enormous' storm-petrel, and I agree that, given the capture of Swinhoe's Storm-petrel *Oceanodroma monorhis* in four European countries within six years of the *Chalice* petrel, this species is a better bet than any other of the previously mooted identities. What I cannot match, however, is their perception of a definite 'small (pale) patch' on the upperwing, and its 'enhancement' via fig. 1 into the presence of white shaft-streaks on the bird's outer-primary bases. I do see a hint of a pale 'notch' just above the primary coverts in plate 194 (enlarged in plate 198) and also in plate 03/5 in Cottridge & Vinicombe (1996). I am puzzled, however, by the way that the mark has a 'headlamp' quality, even 'protruding' slightly from the wing in plates 194/198 and perhaps also in plates 204/205, claimed to feature an American Swinhoe's. This effect is not apparent in the photo in Cottridge & Vinicombe, but oddly this shows a bright distal rim on both sides of the primaries, sharper than in plate 195 where the offside wing's trailing edge shows fainter 'rear lights'. These and the 'headlamps' all show where the immediate backdrop is pale water. All this reeks of some form of illusion, not the basis of a 'real' character which MG and KM claim to have discerned on the copy slides. Furthermore, it remains certain that it was missed by the observers on board the *Chalice* looking specifically for pale primary-shafts.

In British photographs, the primary shafts of Swinhoe's are short but impressive, not just pale but 'etched' pure white, strikingly brighter than the pale but usually diffuse inner-wing-covert bar. Compared with other photographs, their pattern is second only to the 'headlamps' of Matsudaira's Petrel *O. matsudairae*, and it is a puzzle why they are so hard to see or reproduce so badly on film. Should they not be more

obvious than the 'tiny spots' or 'long thin lines' of Markham's Storm-petrel *O. markhami* (plates 251 & 252 in Harrison 1987, plates 3-4/103 in Enticott & Tipling 1997) and Tristram's Storm-petrel *O. tristrami* (plate 254 in Harrison 1987)? I am also puzzled by the lack of any (visible) shaft-streaks on a hand-held Swinhoe's from the Indian ocean (plate 255, Harrison 1987). Is the clarity, even presence of shaft-steaks age-related? Can even wholly dark-quilled storm-petrels show hints of them? Look at the August Leach's Storm-petrel *O. leucorhoa* in plate 238 of Harrison (1987). Above all, can their patterns be altered by light conditions? Look at the Matsudaira's in plate 229 of Harrison (1987) and see on the lower wing (in shadow) only three short-etched lines while on the opposite wing a full 'headlamp' of six lines forming a triangular blaze. We are in a celluloid minefield!

As for Leach's, I agree that it can look large. Once I mistook one flying at c. 10 m over sunlit Severn sands for a dark-phase Arctic Skua *Stercorarius parasiticus*, and on the several occasions that I have seen Leach's with European Storm-petrels *Hydrobates pelagicus*, the former has always looked much bigger – but by how much? I am concerned by Garner & Mullarney's 'average lengths' of the common species. Four other sources give either precise scaling from skins (by Peter Hayman in Beaman & Madge 1998) or separate ranges of size (*BWP*, Jonsson 1992 and Svensson *et al.* 1999) that give a mean of 15.5 cm (not 14 cm) for European and 20.3 cm (not 21 cm) for Leach's (and, incidentally, 19.5 cm for Swinhoe's). These quotients give a progression on length compared with European Storm-petrel of +26% for Swinhoe's and +31% for Leach's. I could accept that some Leach's could appear up to 40% longer than some Europeans, but to suggest 50% as Garner & Mullarney do (admittedly acknowledging a risk of over-estimation) would bring back into the debate both Markham's and Black Storm-petrel *O. melania*. According to Enticott & Tipling (1997), these two are 53% longer than European, while Tristram's and Matsudaira's are 60% longer, and thus 'enormous'. I also feel that other characters of Leach's get scant attention from Garner & Mullarney. It can show a strikingly pale wing-bar (as in the *Chalice* photographs); it does have a greyish hue to the head and shoulders (see the Witherby *Handbook*); and it does not always bound and leap – my own 'Arctic Skua' kept high and 'flapped, banked and floated' into a southwest breeze!

I am all for adventure in bird identification but I feel that the case presented for the *Chalice* petrel to be Swinhoe's is not 'almost certain'. However unlikely, a dark-rumped Leach's is not eliminated and the bird should remain a hoodwink, and a spur to more, much more, work on storm-petrel characters.

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The Birds of Africa *Vol. VII: review correction*

In his laudatory review of *The Birds of Africa* Vol. VII (Fry & Keith 2004), Neil Baker drew attention to an error concerning the range in Tanzania of the White-browed Sparrow Weaver *Plocepasser mahali* (*Brit. Birds* 97: 421). Two subspecies are widespread breeding residents in Tanzania, *melanorhynchus* in the northeast and *pectoralis* in the centre and southeast (*Field Guide to the Birds of East Africa*, Stephenson & Fanshawe 2002). The edited version of Baker's comment states that the *BoA* text omits Tanzania from the range of the species as a whole, but that is not, in fact, the case. Rather, the Tanzanian range is given in detail, although it is attributed only to *pectoralis*; as the review suggests the mapped distribution is accurate.

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Notes

All Notes submitted to *British Birds* are subject to independent review, either by the Notes Panel or by the *BB* Editorial Board. Those considered appropriate for *BB* will be published either here or on our website (www.britishbirds.co.uk) subject to the availability of space.

Hunting strategy of Eurasian Sparrowhawk

The note on persistent searching for prey by a Eurasian Sparrowhawk *Accipiter nisus* (*Brit. Birds* 96: 653-654) prompts me to recall an individual of this species which I observed at Leighton Moss, Lancashire, on 3rd September 2003. The bird appeared in flight over one of the pools and perched out in the open on a dead branch. During the next 15 minutes, I watched it fly across the water to the reed edge, a distance of at least 150 m in the direction from which it had first come, and, without landing, turn and fly back to the same perch. It then repeated the same manoeuvre three more times, always taking the same direct flight path to the same area of reed edge, always turning without landing and returning to its original perch. On each occasion, flight was fast and direct, but noticeably not as rapid as it would have been when chasing prey. On its fifth flight, the hawk disappeared into the reeds at the precise point at which it had turned on the preceding four sorties, and emerged with a small, unidentified prey item before flying off.

As far as I could see, this individual appeared to know that prey was hidden in the reeds. If this was a planned method of hunting, it is one which I have never witnessed before and, on this occasion at least, was a successful one.

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Short-eared Owl preying on Merlin

During autumn 2002, I worked as a marine-mammal observer on a seismic-research vessel to the west of Shetland. In late September, there was a great deal of bird activity, and on 29th two Merlins *Falco columbarius* and a Short-eared Owl *Asio flammeus* arrived on board. The Merlins preyed upon at least ten Meadow Pipits *Anthus pratensis* in the period to 1st October, while the owl spent most of its time sitting on the rope webbing of the ship's helicopter landing-deck.

At dawn on 2nd October, I noticed that a single Merlin and the owl were still present, and that both were on the helideck. At 11.00 hrs, I looked across to the helideck once more and there, sitting over the remains of a bird, was the owl; it had killed and eaten the remaining Merlin! I took some photographs and, once the owl had finished its meal, I retrieved the skull of the unfortunate falcon. The owl remained on board throughout the following day, 3rd October, when it was joined by two more Merlins, but it had gone by 4th October.

The weather throughout the period was overcast, with some rain; visibility was moderate to good, the wind backing from SW 5 to ESE 4, with a moderate swell of around 1.5 m. Our position at 11.00 hrs on 3rd October was 60°32'N 05°14'W.

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Sky Lark using birdwatchers as refuge from Merlins

On 11th November 2003, Alan Walton and I were on the sea wall at Shellness, Isle of Sheppey, Kent, when we saw a Merlin *Falco columbarius* passing us, flying fast and low. About 40 m ahead of us it chased a small bird vertically upwards for about 10 m, when it was joined by a second Merlin and then, barely two seconds later, by a third. We were too intent on watching the Merlins to notice where the prey escaped to. One of the Merlins waited on above us for maybe a quarter of a minute before eventually flying off. I then moved, and in doing so nearly trod on a Sky Lark *Alauda arvensis*, which flew off, protesting loudly. There have

been previous reports of Sky Larks and Meadow Pipits *Anthus pratensis* taking refuge with observers from Merlin attacks (for example, *Brit. Birds* 79: 592, 82: 179, 83: 427, 84: 108), but this one had to survive a three-pronged attack first.

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White-winged Black Tern feeding on butterflies

A White-winged Black Tern *Chlidonias leucopterus* was present on the Lune estuary, Lancashire, during 14th-24th August 2003 (*Brit. Birds* 97: 586). During its stay, it regularly fed on butterflies, especially Small Tortoiseshells *Aglais urticae*, which in turn were feeding on Sea Aster *Aster tripolium* on the saltmarsh. Considerable numbers of butterflies were present in the warm, sunny weather, and the tern took full advantage; I would estimate that it caught one approximately every three minutes. There is no mention in *BWP* of butterflies in the diet of this species, and I wondered whether the long stay of this individual was related to this readily available food source.

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Song of Common Chaffinch resembling that of Lesser Spotted Woodpecker

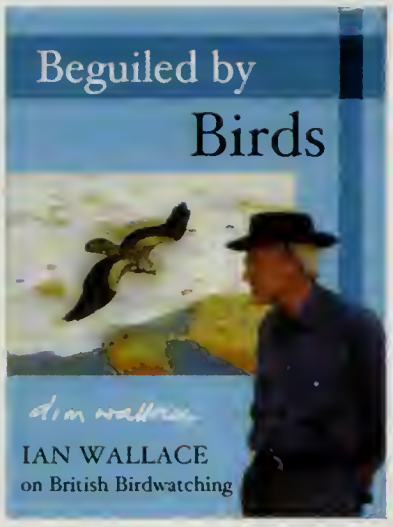
On 8th April 2004, and daily during 13th-20th April, when cycling to work at the RSPB's headquarters, Lars Lachmann heard a Lesser Spotted Woodpecker *Dendrocopos minor* singing from the grounds of Laburnum Lower School in suburban Sandy, Bedfordshire. Since the Bedfordshire Bird Club was engaged in a special Lesser Spotted Woodpecker and Willow Tit *Parus montanus* survey at the time, I called in at the school on 21st April. I was delighted to hear the bird singing ('pee-pee-pee-pee-pee-pee...', etc.) even as I parked my car. It sang about ten times, but I failed to see it. It certainly sounded just like a Lesser Spotted Woodpecker, except that the notes seemed to speed up slightly at the end and to become slightly louder. I was, however, still expecting to see a Lesser Spotted Woodpecker when I sought permission to enter the school grounds to try to get a view of the bird. Accordingly, I was somewhat surprised to find that it was singing not from the only mature tree in the area (a very suitable, old, pollarded Horse Chestnut *Aesculus hippocastanum*), but from the middle of a hedge of Leyland Cypress *Cupressocyparis leylandii* in a nearby garden. I still could not see the bird, although it sang about another ten times. By now, I was convinced that it was not a woodpecker, but was some escaped exotic cage-bird making a song that I had never heard before. Eventually, a small bird flew out of the hedge and settled in the top of the Horse Chestnut. The singing moved with it, and I could see the bird's bill opening and moving with each note of the song. The bird was a Common Chaffinch *Fringilla coelebs*. It was heard on at least one more subsequent date, but attempts by David Fisher to record the song were fruitless.

This seemed to me a very salutary lesson. The song bore an extraordinary and very striking resemblance to that of Lesser Spotted Woodpecker. In addition, in over 50 years of birdwatching, I have never heard a Chaffinch give a song remotely resembling that which I heard repeatedly on 21st April. There are, however, at least two instances noted in this journal of an aberrant Chaffinch song resembling that of another species: Eurasian Nuthatch *Sitta europaea* (*Brit. Birds* 84: 224-225) and Greenfinch (*Brit. Birds* 94: 603).

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BEGUILED BY BIRDS:
IAN WALLACE ON
BRITISH BIRDWATCHING

By Ian Wallace.
Christopher Helm, A&C Black, London, 2004. 272 pages; 170 photographs; 182 colour illustrations.
ISBN 0-7136-6535-1
Hardback, £29.99.



Rather like the proverbial teenager who can't wait to be a grown-up, I remember wishing that I could say I had been birdwatching for 20 years. It sounded so full of maturity and experience. Multiply those twenty years threefold, and you are left with a far more exclusive club. One of its few extant members is the engaging, accessible, controversial and undeniably inspiring Ian Wallace. Living legend might sound sycophantic, but Wallace is one of the very few to whom the birdwatching community can consider applying the title.

So comes the task of summing up this book, dubbed Wallace's own life review of birdwatching in Britain, and originally to be called the *Magic Carpet Ride*, but for now entitled *Beguiled by Birds*. Personally, I think that the title undersells the book. It is much more a history of British birdwatching, albeit from a personal perspective, rather than simply being one man's odyssey. I hope that the cover is eventually changed to engage a wider audience.

This is easily the most difficult book I have yet had to review, since it is extremely pithy and jam-packed with original history, information, anecdotes, challenges and stories. Not only can Wallace draw on a vast reserve of six decades of experience, but his breadth of interest is greater than most. The passion is undimmed as he waxes lyrical on breeding birds, migration, conservation, identification, local, national and international studies. He is the only artist/author in the monumental *BWP*; in fact, I'm left wondering who his rivals are.

All this is crammed into 272 pages, beautifully starlit with his own colourful illustrations. He seems to have been everywhere, the array of people photographs, remind me of the apparent omnipresence of Forest Gump. There are some 27 chapters in chronological order, from a look at the pre-history of birds, through the gradual observation, shooting, cataloguing, and illustrating that led into the twentieth century. Some of the personalities of birding folklore were quite new to me, and fascinating. For example, I suggest you look up the exploits of one E. C. Stuart Baker of whom Wallace writes 'Look upon such men and their works ye twitchers and quail.' There were others, such as Boyd and Coward, who I knew about from my native Cheshire, of whom I gained a fuller picture. It is clear to me that some of the works of late nineteenth- and early twentieth-century ornithologists, while not generally familiar to my generation, are quite outstanding, and Wallace helpfully fills in background for many of these ornithological giants. The progress in development of bird books, bird art, recording and rarities committees, local bird clubs and personalities, is spelt out as the chronology of the chapters progresses. Scilly fans will particularly enjoy the accounts of St Agnes in the early days. The role and effectiveness of the RSPB is subject to a piercing review of its strengths and weaknesses. The various contributors to modern birdwatching, right up to the variety of stalls and products at the British Birdwatching Fair, get comment and attention. And, with snippets from the responses by his peers to a survey scattered throughout the book, there is added colour and a check to this becoming a one-man monologue.

The reason I found the book so hard to review is that there is really so much purposeful (to highlight the author's favourite word) information that it requires slow and deliberate reading if one is to engage fully with all the subjects covered. Wallace is not slow to be self-effacing and you cannot help but feel for him as he bares his soul over his troubled discipleship under Meinertzhagen. He is a great wordsmith, and eloquent and expressive phrases (such as the 'hydra-headed development in dynamic taxonomy') are frequently used to describe his take on some aspect of ornithology, though I found myself reaching for the dictionary on some occasions.

I felt that with the recent plethora of identification and photographic guides, it was about time that we had a really good read. I hoped that this book was going to be it, and although much more dense than his seminal *Discover Birds* (Whizzard Press, 1979), it will be one that I enjoy picking up and chewing on, purposefully, for a long, long time. It is vital reading for anyone interested in the greater story in which we find ourselves, in terms of the heritage of birdwatching in Britain. Finally, this is another Wallace book which leaves the reader utterly inspired to get back out into the field, and confirms his colossal contribution to British ornithology.

Martin Garner

THE BIRDS OF DORSET

By George Green. Christopher Helm, A&C Black, London, 2004. 520 pages, colour photographs; line-drawings; tables and graphs. ISBN 0-7136-6834-9. Hardback, £40.00.

It is only just over 20 years since the last *Birds of Dorset* was published. The main impetus for this new work was the Dorset Bird Club's (tetrad-based) breeding bird survey, undertaken between 1987 and 1994. This book presents the results of that survey and is an altogether more thorough and comprehensive volume than its predecessor. It has been written by an author who has clearly made a major contribution to the study of birds in his adopted county.

And from a birder's point of view, what a fabulous county it is – containing the migration watchpoints of Portland, Durlston Head and Christchurch Harbour, the second-largest natural harbour in the world at Poole, the shallow estuarine lagoon known as The Fleet, a large proportion of the nation's remaining lowland heathland, chalk downlands, ancient woodlands and the floodplains of the rivers Frome and Stour. Little surprise then that Dorset boasts a county list (405 species) matched by few others in the country.

The bulk of this book, quite rightly, comprises the systematic list. The history of Dorset ornithology and the county's location, climate, geology and landscape, and its major habitats are well covered in other publications, and the short chapters devoted to these subjects in the present work are just right. The species accounts (well-defined subspecies are also given full accounts) are accurate and well written, if a little dry, and are packed with data. Where relevant, a map showing the breeding distribution by tetrad is given. While it is entirely appropriate to dedicate most space to those species for which the county has important breeding or wintering populations, I suspect that some readers would have hoped for more expanded versions for the rarities. Here, an opportunity to bring a more personal and lighter tone to the proceedings has perhaps been missed. Tables are a prominent feature of the species accounts and, where relevant, cover log data from key migration watchpoints, Wetland Bird Survey data from key wetlands, and a range of breeding and other information. I think that much of this information could have been presented more effectively in the form of graphs (those that have been drawn work very well), while space could have been



saved too, as occasionally the accompanying text duplicates what has already been displayed in the table. These are but minor criticisms though, and the author is to be commended for bringing all these data together in one place. It is also evident that the species texts were completed initially in 1999, as an additional three years' worth of data is bolted on as a postscript where relevant. While this is perhaps not ideal, it is an almost inevitable consequence given the enormity of the task facing just one man. My biggest disappointment is that pre-1974 records from that part of Dorset which, until the local government reorganisations in that year, was part of Hampshire (most significantly, the Christchurch Harbour complex, including both Stanpit Marsh and Hengistbury Head) are relegated to an appendix, although a full explanation of why this decision was taken is given. Further appendices list all the significant records for 2003, bringing the book as up to date as possible, and provide details of species in Category D.

The author's expressed aim was to use local photographers and artists to give the book a real Dorset flavour and this should be applauded. The book has certainly not suffered as a consequence. There are 40 pages of colour photographs and these offer a good balance, capturing the county's key habitats and sites well, and covering a mix of breeding birds, migrants and rarities (the latter including the Durlston Brown Thrasher *Toxostoma rufum* and the Winspit Wallcreeper *Tichodroma muraria*). The quality is generally excellent, although some shots are rather too blue to my eye. It is a shame that the photos were not used to break the text up rather more, but I assume that the cost of this was considered prohibitive by the publisher. I am not a big fan of vignettes but those used here, all of them by Lawrie Chappell, are generally superior to many I have seen. Their spacing could, perhaps, have been better planned to break up some very lengthy runs of text.

Publication of this book was aided financially by the Dorset Bird Club and I am sure that they will be very pleased with the outcome. It must have all but dominated George Green's life for some 12 years and he is to be congratulated on producing a county avifauna that compares favourably with any of those published recently. The Dorset Bird Club and the county's resident and visiting birdwatchers are indebted to him, and most of them must surely own a copy by now.

Paul Harvey

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

Environmental Information Regulations drama

Alarm bells are ringing at bird clubs across England and Wales after a little-noticed change in the law which came into effect on 1st January. The Environmental Information Regulations (EIR) have been implemented in parallel with the Freedom of Information Act. Both pieces of legislation give members of the public the right to request information held by a public body. But what constitutes a public body? And what information may have to be divulged? Judith Smith, of the Association of County Recorders & Editors (ACRE) and County Recorder for Greater Manchester, first alerted bird clubs to the fact that EIR could spell trouble.

The initial fear among conservationists who took time to study the regulations was that access to environmental information held on a public register, for example a local Biological Records Centre run by a local authority, would be a green light to the unscrupulous. Imagine egg-collectors being able to request all the nest records for Peregrine Falcon *Falco peregrinus* – breeding data collated by bird-club volunteers over many years. The bird club itself may not be a public body (as we went to press, just days before implementation of the EIR, it was still unclear what status bird clubs have) but if bird-club *records* are deposited with a public body, they would be available to anyone.

Common sense would suggest that any sensitive information should be exempt from disclosure. Indeed, this is explicit in guidance issued by the Scottish Executive for the Environmental Information (Scotland) Regulations, after the RSPB flagged up the risk to rare birds. But south of the border, Defra inspires less confidence. The initial consultation on the EIR did not include relevant bodies like Biological Records Centres or wildlife groups, and Defra seems to have been startlingly unaware of either the way in which biodiversity data are supplied across the country or the potential outcome of their regulations. We can only hope that Defra will fall in line with Scottish precedent, and amend the draft regulations in England and Wales so that locations of rare birds will definitely be excluded from any register of public information. But just what *is* a rare bird? Judith Smith comments: 'For example, Long-eared Owl *Asio otus* is not generally categorised as a rare breeding species, but a couple of years ago I was told that chicks are worth £200 each, owing to the fact that the species is reluctant to breed in captivity, and we have certainly suffered in this area from suspected chick/egg theft.' The Greater Manchester Bird Recording Group is taking no chances and has formally requested the return of its 200,000 bird records (a decade's worth of data) from Bolton Museum, which has acted as its Biological Records Centre. Will other bird clubs follow suit? Please tell N&c if you do.

Even if the rare-birds loophole is about to be plugged, there is another unintended consequence of the EIR that has been identified by the National Biodiversity Network (www.nbn.org.uk). This is that the goldmine of information lodged in Biological Records Centres can now be plundered by environmental consultants without them having to pay even a nominal fee to the bird club or botanical society which has gathered those records over decades, which surely cannot be right.

Quota for killing Hen Harriers mooted

The Council of English Nature gathered in Peterborough on 7th December 2004 with a proposal in front of them to permit licensed killing of Hen Harriers *Circus cyaneus*. Council members were reviewing EN's Hen Harrier Recovery Project (HHRP) (see www.english-nature.org.uk/about/meetings/GCP0451.pdf) and outline proposals for its continuation. The bleak news was that the project has failed in three of its four objectives because of relentless harrier persecution by grouse-shooting interests in the uplands of northern England. When the project started in 2002, its prime objective was a modest target of ten successful breeding females by 2004, spread over at least two nesting areas (Bowland in Lancashire and Geltsdale in Cumbria). The project also aimed to secure a steady increase in numbers and range of breeding harriers and a wider public understanding of the birds' plight through media coverage.

Well, the media coverage has been achieved because the situation is so dire. In 2002, 7 successful females fledged 22 young at 5 breeding areas; in 2003, the comparable figures were 9, 29 and 6. In 2004, however, 8 females reared 28 young at just one site – Bowland – where the United Utilities estate in the centre of the Fells (*not* a commercially driven grouse moor) is the only area in England where Hen Harriers have bred successfully on an annual basis.

Extension of the HHRP required radical thinking and, last

September, EN staff held a meeting with all interested parties: conservation groups, landowners and gamekeepers. Among the proposals were supplementary feeding of nesting harriers to deter them from taking occasional Red Grouse *Lagopus lagopus* chicks; harrier-friendly land management on non-grouse moor; and reintroduction of Hen Harriers to former breeding areas in the lowlands. The most controversial proposal – from grouse-moor managers – was the provision of a 'safety net' which would work by allowing Hen Harrier numbers to increase to an agreed level above which the population would be controlled. Legalised killing would require the UK's derogation from the EU Birds Directive (Hen Harrier has the highest protection – Annex I) and would be unlikely to pass the European Commission. It would also set a dangerous precedent in UK conservation.

Unsurprisingly, EN Council did not endorse this proposal. Instead, a new five-year HHRP has been agreed, to continue the monitoring programme of the previous three years but also to develop a package of measures to increase the harrier population in England and benefit the wider upland ecosystem. The success of the new project depends on co-operation from grouse-shooting interests; but one worrying development reported in the review was *winter* persecution of Hen Harriers: ten birds were shot at two different roost sites in the North Pennines in winter 2003/04. To prevent a repetition of this, Steve Downing, of the Association of Chief Police Officers, is working full-time on Hen Harrier conservation and is keen to hear about any Hen Harrier roosts as part of Operation Artemis (www.savethehenharrier.com). If you can help Steve, please contact him on 07917 267022.

English egg-collector jailed in Scotland

A man who stole birds' eggs on Tiree has become the first person to be jailed for wildlife crime by a Scottish court. Matthew Gonshaw, from east London, had a rucksack full of eggs when he was caught in June. Gonshaw is a serial offender who has stolen hundreds of eggs of rare species over the years. This time he was caught with 30 eggs taken from nests of Common Eider *Somateria mollissima*, Arctic Tern *Sterna paradisaea*, Common Guillemot *Uria aalge* and Razorbill *Alca torda*. Gonshaw's solicitor claimed that her client did not realise that 'common' birds were covered by the new Scottish legislation, but the Sheriff was unconvinced; he fined Gonshaw £5,000 and sentenced him to four months in prison – the first time anyone has been jailed for wildlife crime in Scotland (the Wildlife and Countryside Act 1981 was updated by the Criminal Justice (Scotland) Act 2003 to add the possibility of prison for the worst offenders).

In 2002, Gonshaw was given a three months' prison sentence at Thames Magistrates Court after being found guilty of stealing eggs of rare breeding birds in Scotland and in Kent. At that time, an offender could not be jailed north of the border for wildlife crime. RSPB Scotland hailed the sentence handed down by Oban Sheriff Court as a significant landmark and hoped that it would serve as a deterrent to others.

Bird Photograph of the Year 2005

This long-established competition seeks to recognise the best and/or the most scientifically interesting bird photographs taken during the calendar year 2004. Up to three colour images may be submitted by each photographer. Preference is given to photos taken in the Western Palearctic, but those of species on the West Palearctic List taken anywhere in the world are also eligible. As well as the overall winner, there will be additional awards for the best digital image and for the highest-placed photograph submitted by an entrant aged 25 or under. Both colour transparencies and digital images are eligible for the competition. For full details of the rules (essential for those who wish to submit digital photos), visit our website (www.britishbirds.co.uk), or write to British Birds (BPY), The Banks, Mountfield, Robertsbridge, East Sussex TN32 5JY, enclosing a stamped, self-addressed envelope. The closing date for entries this year is 30th April.

Rasping record for Corn Crakes

The number of Corn Crakes *Crex crex* in the UK soared in 2004, with the number of calling birds up by a massive 28% on the 2003 figure. A decade ago, this species was on the brink of extinction in the UK, with a mere 470 birds recorded in 1993, almost all confined to the Hebrides and Orkney. Since then, the RSPB/Scottish Natural Heritage/Scottish Crofting Foundation Corn Crake Initiative has made payments to crofters and farmers with Corn Crakes on their land to manage their hay or silage fields sensitively for the birds. In 2004, £120,000 was paid out in grants and no fewer than 1,067 calling birds were reported.

Stuart Housden, the RSPB's Director in Scotland, said: 'This year's increase suggests that the practices we have researched and developed over the years to encourage Corn Crakes are working extremely well... There is still one problem, however, and that is that the range of this bird is not expanding. In conservation terms, it is unwise to have all your eggs in one basket. If this species is to establish a firm foothold, we must help it to expand back into its former range, in particular, back onto the mainland.'

OSME research grants

The Ornithological Society of the Middle East (OSME) has recently awarded research grants from its Conservation and Research Fund to a number of projects, including:

- £1,000 to an OSME-supported expedition to Syria In January-February 2004, fieldworkers on this trip surveyed some major wetlands for the first time and found range expansions for Purple Gallinule *Porphyrula martinica*, Moustached Warbler *Acrocephalus melanopogon*, Clamorous Reed Warbler *Acrocephalus stentoreus*, Bearded Tit *Panurus biarmicus*, Iraq Babbler *Turdoides altirostris* and several new species for Syria including Smew *Mergellus albellus*, Asian Desert Warbler *Sylvia nana* and Firecrest *Regulus ignicapilla*.
- £500 for survey work in Eastern Yemen This vital fieldwork in little-known Eastern Yemen is part of the *Atlas of the Breeding Birds of Arabia* project.
- £300 for survey work at Barr al Hickman wetlands, Oman The project aims to resurvey the important areas identified in the 1989/90 survey using the same methodology. Specific surveys are to be carried out to establish the status of Slender-billed Curlew *Numenius tenuirostris* and numbers of Great Knot *Calidris tenuirostris* and Broad-billed Sandpiper *Limicola falcinellus* in the area.
- £200 for a Striated Scops Owl project in Southern Israel The work will look at the factors affecting the winter distribution of Striated Scops Owl *Otus brucei*. Fieldwork will be carried out over two winters, birds will be trapped for ringing to investigate site fidelity, and pellets analysed.
- £150 for a Lesser Kestrel project in Palestine This money will finance an awareness campaign of the plight of the Lesser Kestrel *Falco naumanni* for school children.

OSME welcomes applications for grants of up to £500 from its Conservation and Research Fund to support research projects in the region. To submit an application write to: OSME, c/o The Lodge, Sandy, Bedfordshire SG19 2DL; e-mail: grants@osme.org. Applicants are required to provide a project brief.

Wintering Warbler Survey 2004/05

In recent decades, the number and diversity of wintering warblers has increased significantly. A new BTO survey aims to find out how many individuals currently spend the winter in Britain & Ireland, and where they occur. The survey results will also update previous national BTO surveys on the Blackcap *Sylvia atricapilla*, in 1945-54 and 1978/79.

Details are required of all wintering warblers (although Goldcrest *Regulus regulus* is optional) recorded between 1st November and 31st March. The three target species are Blackcap, Common Chiffchaff *Phylloscopus collybita* and Firecrest *R. ignicapilla* but records of other, more scarce, wintering species, such as Lesser Whitethroat *S. curruca*, Pallas's Leaf *P. proregulus*, Yellow-browed *P. inornatus*, Hume's *P. humei* and Willow Warbler *P. trochilus* are also requested, and those of resident Cetti's *Cettia cetti* and Dartford Warbler *Sylvia undata* are welcome. As well as numbers, dates and locations, the survey asks for details on the sex of each bird (mainly Blackcap); the number of singing individuals; general habitat details; food items (mainly Blackcap); the number of 'grey' Chiffchaffs (*abietinus* or *tristis*); and also any notes on behaviour. For further details about the survey and how to contribute, please visit the BTO website (http://www.bto.org/survey/special/wintering_warblers.htm) or contact Greg Conway, BTO, The Nunnery, Thetford, Norfolk IP24 2PU; tel. 01842 750050; e-mail: greg.conway@bto.org

Young Turks

'In October, I attended the 7th Turkish Bird Conference, which has now become an annual event. It was held in Izmir, on the edge of the Aegean, with two days of talks followed by two days of trips to marsh and mountain. I gave a talk on Turkey in the 1960s, when I first visited the country and when there were just one or two birdwatchers there. In 2004, there were over 150 Turkish birders at the talks, and on the outings even more. Turkey really does now have an active birding community, with a field guide translated into Turkish and a new book cataloguing 184 Important Bird Areas, many of which have been identified and surveyed by the Turks themselves – with foreign support. There is also a vibrant new wildlife conservation NGO – Doğa Derneği – which is to become the BirdLife International partner in Turkey. Most of the birdwatchers at the conference were under 30 (and about one-third were female). Compare this with the mix at the annual BTO conference! At the last one I attended, two years ago, there was hardly anyone below 30. I was wondering if there was something we could learn here from the young Turks, when I was brought to a halt in my thought process. I happened to ask a young girl, who was active in conservation, what changes she would like to see to help wildlife in Turkey. Her reply? "I wish we were all 20 years older – then decision-makers would take our views more seriously." The good thing is that they will be one day.'

(*Contributed by Richard Porter*)

New address

James Lidster, the Dorset Recorder, has moved. His new contact details are 6 Cranesmoor Close, Bovington, Dorset BH20 6LQ; tel. 01929 401317; e-mail: dorsetbirds@btopenworld.com

Monthly Marathon

Photo no. 211: Yellow-legged Gull



Volker Konrad

18. Yellow-legged Gull *Larus (cachinnans) michahellis*, Helgoland, Germany, September 1999.

As usual, it is the eleventh hour and I'm staring at Monthly Marathon photo number 211 (*Brit. Birds* 97: plate 264, repeated here as plate 18) and struggling for inspiration. I'm pretty sure that I know what it is, but I am not so sure that I can explain exactly *why* I think it is what it is, or come up with an analysis that proves this solution is the correct one. But then this is often how it is in the arena of large gull identification.

In the course of the past 20 years or so, the study of gull identification has practically developed into an ornithological endeavour all on its own, and some of the most dedicated 'larophiles', it seems, think of little else. For those of us who are drawn to identification challenges, there is an unlimited supply of 'mystery gulls' observed all around the world and, thanks to the internet, the associated identification problems can be shared, discussed and debated right down to the finest detail of individual feather patterns and moult. It is not unusual for such discussions to attract a range of opinions, and while there may be a clear consensus in the end, there is seldom unanimous agreement, especially if it is a question of whether a particular bird is an out-of-range vagrant rather than an atypical example of a common species. In such cases, it may boil down to the impossible choice of weighing the perceived potential for vagrancy of the rarer option against the potential for individual variation of the common alternative.

The gull featured here is an adult, which usually makes identification a little more straightforward, and it is clearly one of the larger species belonging to what might broadly be described as the Herring Gull *Larus argentatus*/ Lesser Black-backed Gull *L. fuscus* group. As it is alone, we are unable to make direct comparisons with similar species, a common problem when attempting to identify birds from photographs. In the field, our ability to rapidly identify numerous gulls in quick succession, often with hardly any conscious or detailed analysis is, I believe, greatly facilitated by the comparisons our brain is constantly making between one bird and the others around it. With enough practice, the scanning of a gull flock can be so rapid that it may seem as if our eye is drawn straight to the bird that for some reason is unusual. Of course, the 'unusual' in gulls doesn't necessarily mean something rare, and a failure to realise this can easily lead to errors and arguments!



19. 'Monthly Marathon'. Photo no. 213. Eleventh stage in thirteenth 'Marathon'. Identify the species. Read the rules (see page 54), then send in your answer on a postcard to Monthly Marathon, c/o The Banks, Mountfield, Robertsbridge, East Sussex TN32 5JY, or by e-mail to editor@britishbirds.co.uk, to arrive by 28th February 2005.

With gull photos especially, where subtle shades of grey on the upperparts are often crucially important to identification, it is good practice to routinely check for signs of underexposure or overexposure. In this case, the soft, ill-defined shadow areas and rather dull bill colour suggest overcast conditions, usually better for determining shades of grey than bright sunlight, but in heavily overcast conditions greys are prone to looking slightly darker than their true shade. With nothing else alongside, we have little option but to make a subjective assessment of the shade of the grey upperparts; they certainly look darker than those of an *argenteus* Herring Gull, but are they a little on the light side for a *graellsii* Lesser Black-backed Gull? My guess is that the grey is closer to the medium-grey of an adult Common Gull *L. canus* or Kittiwake *Rissa tridactyla* than the darker, slaty-grey of *graellsii*. The short primary-projection and the clearly fresh condition of the primary tips indicate that the bird is actively growing its outer primaries, suggesting that the photo was taken in early September, or thereabouts. With the outermost primaries still growing, there is no clue to be derived from the wing pattern. If we are correct in excluding *graellsii* Lesser Black-backed Gull on the basis that the upperparts are not quite dark enough, then we can exclude the closely similar *heuglini* on the same grounds. It is then a question of deciding whether it is a Herring Gull of the darker-backed Fennoscandinavian subspecies *argentatus* or one of the so-called 'Yellow-legged Gulls', which, depending on which taxonomic view one follows, could be limited to the '*michahellis*-group' (*michahellis*, *atlantis* and perhaps *armenicus*) or include the '*cachinnans*'-group (*cachinnans* and *barabensis*). Our task seems to be getting unnecessarily complicated now, and if we are not already very familiar with all of these taxa, we could spend an eternity agonising over the possibility that the mystery bird might be, for example, a *barabensis* Yellow-legged Gull. Maybe we can make it a little easier for ourselves? The *BB* List (*The 'British Birds' List of Birds of the Western Palearctic* (1997), including the modifications set out in *Brit. Birds* 97: 2-5 and 110) treats 'Yellow-legged Gull' as one species, and does not split the various yellow-legged taxa into additional species. Therefore, we need decide only if the mystery bird is the darker-grey-backed *argentatus* Herring Gull or *any one* of the Yellow-legged Gulls! Unfortunately, *argentatus* can be very similar to *michahellis*, especially the large percentage of adult *argentatus* (so-called '*omissus*'-types) that have bright yellow legs. There is, however, a useful average difference in the extent of the winter head-markings: in *argentatus*, these markings generally extend over the whole head, neck and even onto the sides of the breast. In *michahellis* the markings are usually confined to the sides of the head above the gape-line, and are often concentrated around the eyes, very much as shown by our mystery gull. Maybe too the very dark-looking orbital-ring can be regarded as a pointer to a *michahellis*. On balance, it seems that our bird has more going for it as a *michahellis*-type Yellow-legged Gull than an *argentatus* Herring Gull, though I have not the slightest doubt that some *argentatus* could look extremely similar. In reality, knowing where the bird is, exactly what time of the year it is and, most importantly, how it compares with other gulls around it would all greatly assist the identification process, but for now we have to rely on a combination of intuition and guesswork. I just hope it wasn't photographed in Finland...

Killian Mullarney

Monthly Marathon Rules

1. Only current individual subscribers to *British Birds* are eligible to take part. Entrants should give their name, address and *BB* reference on their entry. Only one entry per person each month.
2. Entries must be sent either by post, each one on a separate postcard, or by e-mail and be received at the British Birds Editorial Office (Monthly Marathon, British Birds Editorial Office, The Banks, Mountfield, Robertsbridge, East Sussex TN32 5JY; e-mail: editor@britishbirds.co.uk) by the stated closing date. Every care will be taken, but, even if negligence is involved, no responsibility can be accepted for non-delivery, non-receipt or accidental loss of entries.
3. All *BB* subscribers are eligible, except members of the Editorial Board and staff of *British Birds*, Directors and members of staff of SUNBIRD/WINGS Holidays, and Directors and members of staff of our printers. (Members of the *BB* Notes Panel, the Rarities Committee, and other voluntary contributors – including bird-photographers, even if one of their photographs is used in the competition – are eligible unless proscribed above.)
4. To win, a *British Birds* subscriber must correctly identify the species shown in ten consecutive photographs included in this competition. The Monthly Marathon will continue until the prize has been won.
5. In the event of two or more *BB* subscribers achieving the ten-in-a-row simultaneously, the competition will continue each month until one of them (or someone else!) achieves a longer run of correct entries than any other contestant.
6. In the event of any dispute, including controversy over the identity of any of the birds in the photographs, the decision of the Editor of *British Birds* is final and binding on all parties.
7. No correspondence can be entered into concerning this competition.
8. The name and address of the winner will be announced in *British Birds*.
9. The prize for the next winner of Monthly Marathon will be £1,500 towards the SUNBIRD holiday of their choice.

The bird in the photograph discussed here was captured on film on Helgoland, Germany, in September 1999, and was identified there as *L. (c.) michahellis*. For the purposes of the competition, answers stating *atlantis* were also considered correct. Most (71%) of the entrants arrived at the right answer, either by luck or good judgement, and the leader board after the last three rounds shows nine contestants on level pegging with three correct answers.

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Recent reports

Compiled by Barry Nightingale and Anthony McGeehan

This summary of unchecked reports covers mid November to mid December 2004.

American Wigeon *Anas americana* Whisby (Lincolnshire), 14th November; Wick (Highland), 20th November; Loch of Hillwell (Shetland), 21st November to 12th December; Loch of Crinan (Argyll), 28th November; South Uist (Western Isles), 6th-12th December; Rogerstown (Co. Dublin), 10th December; Beauly Firth (Highland), 12th December. Black Duck *Anas rubripes* St Mary's (Scilly), male, 26th-27th November, with a female on 3rd-13th December; New Pitsligo (Northeast Scotland), 5th-11th December. Ferruginous Duck *Aythya nyroca* Elstow (Bedfordshire), 13th November to 11th December; Marazion (Cornwall), 14th November; Oakley Marsh, Droitwich (Worcestershire), 22nd-23rd November; Bawdsey (Suffolk), 11th December; Gort (Co. Galway), 12th-13th December. Lesser Scaup *Aythya affinis* Dozmary Pool (Cornwall), 14th November to 11th December; Scotney Gravel-pits (East Sussex/Kent), 17th November to 12th December; Lee Reservoirs (Co. Cork), 5th December; Abberton Reservoir (Essex), 11th-12th December. King Eider *Somateria spectabilis* Loch Ryan (Dumfries & Galloway), 2nd-5th December; Titchwell (Norfolk), 11th-13th December; Cruden Bay (Northeast Scotland), 13th December.

Cattle Egret *Bubulcus ibis* Firsdown (Wiltshire), 16th November to 13th December. Sora *Porzana carolina* Attenborough Gravel-pits (Nottinghamshire), 12th-13th December. American Coot *Fulica americana* Loch of Benston (Shetland), 13th November to 4th December. Wilson's Phalarope *Phalaropus tricolor* St John's Lake (Cornwall), 14th November.

Ivory Gull *Pagophila eburnea* Bettyhill (Highland), 15th-17th November, same, Kyle of Tongue (Highland), 23rd November and 28th November to 8th December. Forster's Tern *Sterna forsteri* Skerries (Co. Dublin), 9th-13th December. Little Auk *Alle alle* Large numbers were reported in early to mid November, mainly along the northeast coasts of England and Scotland, and particularly on 14th: 4,457 past St Abb's Head (Borders) in three hours; 7,475 past the Farne Islands between midday and dusk; 3,100 past Hauxley in an hour; 9,000 past Newbiggin; 2,000 per hour past Cullercoats (all Northumberland); 3,500 past Whitburn (Co. Durham) in seven hours; and 1,940 past Flamborough (East Yorkshire) in nine hours. Another heavy passage on 18th November included 10,265 past the Farnes, while on 19th, 400 passed Holy Island (Northumberland) in an hour, 100 per hour passed Tynemouth (Tyne & Wear) and 1,500 passed Whitburn; and then 2,022 passed St Abb's on the morning of 20th.

Richard's Pipit *Anthus novaeseelandiae* Land's End (Cornwall), 25th November; Nanjizal (Cornwall), 26th November; Coal Clough (Lancashire), two, 1st-11th December; Pegwell Bay (Kent), 3rd December; Staines Moor (Surrey), 11th December; Kinmel Bay (Conwy), 12th December. Blyth's Pipit *Anthus godlewskii* Land's End, at least 15th November to 13th December.

Waxwing *Bombycilla garrulus* The widespread influx continued, with the largest flocks in Scotland, including 1,800 at Kincorth (Northeast Scotland) on 21st November; 1,000 near Glasgow on 22nd and 820 there on 26th; 1,200 in Aberdeen and 700 in Edinburgh on 28th; 530 near Musselburgh (Lothian) on 29th; and 1,000



Neil Bowman

20. Adult Chinese Pond Heron *Ardeola bacchus*, Eccles-on-Sea, Norfolk, October 2004. A belated report concerns this colourful heron, seen for a short time in Norfolk on 31st October, and then again at East Dean, Hampshire, on 13th November. As a potential 'first' for Britain, it would not have been high on most people's list of possible vagrants, but the full review process will doubtless reveal more about the likelihood of it being a true vagrant.



Stuart Williams

21. First-winter Ivory Gull *Pagophila eburnea*, Kyle of Tongue, Highland, December 2004.



Sam Alexander

22. Juvenile Rose-coloured Starling *Sturnus roseus*, Aberdeen, Northeast Scotland, December 2004.

at Bridge of Don (Northeast Scotland) on 30th November. The flocks spread south, with some of the larger groups in the second half of November being 450 Corbridge (Northumberland), 300 Penrith (Cumbria), 600 Dalston (Cumbria) and 600 Jarrow (Tyne & Wear). During the first two weeks of December, there were up to 520 at Carlisle (Cumbria), 300 Blaydon (Co. Durham), 300 Jarrow and 500 Kirkby Moorside (North Yorkshire). South of Yorkshire, the biggest flocks reported were 120 in Norwich in late November, and 112 in Ipswich in early December, but smaller flocks were widespread. In Ireland, there were several flocks of 200-400 in Northern Ireland, and c. 200 in Dublin, but few were seen elsewhere.

Pallas's Leaf Warbler *Phylloscopus proregulus* Sandwich Bay (Kent), 30th November; New Romney (Kent), 4th-6th December. Hume's Warbler *Phylloscopus humei* Helston (Cornwall), 13th-15th November. Dusky Warbler *Phylloscopus fuscatus* Samphire Hoe Country Park (Kent), 25th-28th November; Kessingland (Suffolk), 2nd-12th December. Western Bonelli's Warbler *Phylloscopus bonelli* South Ronaldsay (Orkney), 15th November.

Rose-coloured Starling *Sturnus roseus* Sullom (Shetland), 13th (and possibly since 5th) November; Aberdeen, 23rd November to 1st December. Arctic Redpoll *Carduelis hornemanni* Titchwell (Norfolk), 3rd-13th December.

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Sevenoaks Wildfowl Reserve On the A25 between Riverhead and Sevenoaks Bat and Ball Station on
9 Jan, 6 Feb, 6 Mar & 3 Apr

Pagham Harbour LNR On the B2145 into Selsey, West Sussex
30 Jan, 27 Feb, 27 Mar & 24 Apr

Dinton Pastures Country Park Near Reading (M4, A329(M) Woodley turnoff) then A329 to Winnersh and Winnersh Station (B3030)
16 Jan & 10 Apr

The Kent Wildlife Trust, The Tyland Barn, Sandling, Near Maidstone, Kent
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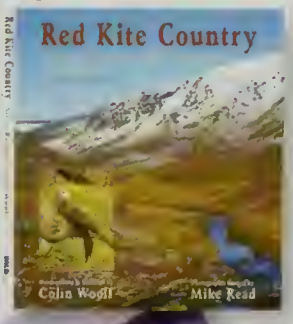
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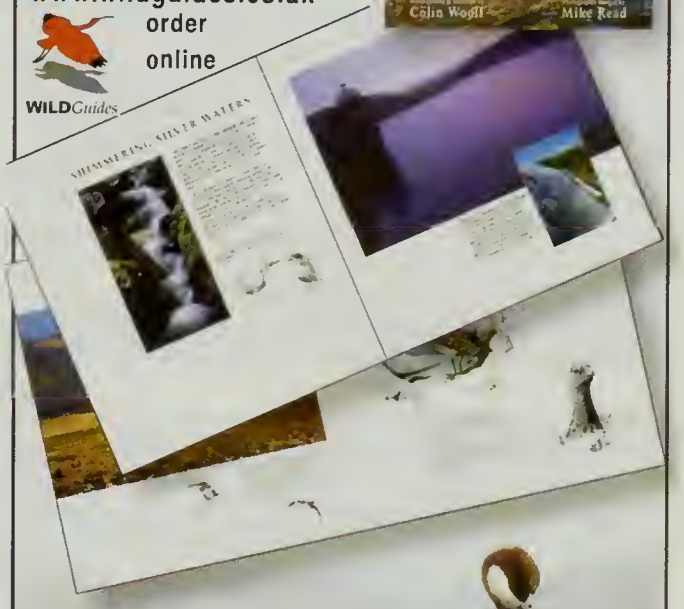
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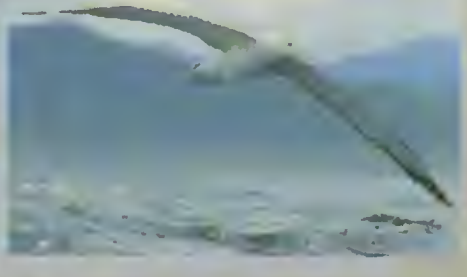
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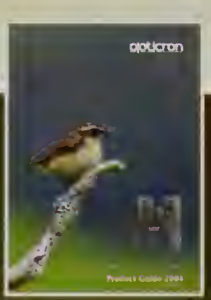


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Studies of West Palearctic birds: Turtle Dove

Stephen Browne and Nicholas Aebischer



Ray Scally

ABSTRACT The Turtle Dove *Streptopelia turtur* has declined, in terms of both range and abundance, throughout much of northern Europe over the last 30 years. Until recently, the species was relatively poorly studied in the modern agricultural landscape in Britain. Concerns over its conservation status prompted an intensive research programme to gather information on its breeding ecology, identify the causes of the recent decline and make recommendations to aid its recovery and conservation. Turtle Doves require tall, overgrown bushes for nesting and short weed-rich areas for feeding, but agricultural intensification has markedly reduced the availability and suitability of these habitats. Over the last 40 years, Turtle Doves have switched from foraging in 'natural habitats' to those created by humans, and their diet is now primarily seeds from cultivated plants. The number of chicks fledged per pair per year is today almost half that in the 1960s, while autumn migration has become significantly earlier. Many management options to help to conserve the species can be achieved within the current UK agri-environment policy framework.

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The Turtle Dove *Streptopelia turtur* is a summer migrant to Britain and Europe, but perhaps most people in Britain would associate the bird with the second day of Christmas rather than high summer, thanks to the popular carol *The Twelve Days of Christmas.* This subversive, pro-Catholic hymn was supposedly written at a time when it was illegal to make direct reference to Catholicism, and the 'two Turtle Doves' are thought to represent the Old and New Testaments. Historically, human interest in the Turtle Dove was associated with the bird's faithfulness, and because it was an emblem of hope and peace. The writings of Saint Jerome (c. AD 320-420) and of Alain of Lille, in his twelfth-century work *The Complaint of Nature*, state that a Turtle Dove would not seek another mate should its original partner die. Indeed, it was thought that if a Turtle Dove lost its mate then it too would soon die. It was not until the eighteenth century that the species became more noted for its migratory abilities, being referred to in at least two of Gilbert White's letters. Today, however, most bird-watchers in southeast England and much of Europe would associate its purring calls with warm summer evenings, rather than love or peace. In recent years, the calls of this small, attractive and once-common dove have been heard less frequently and its population decline and range contraction in Britain and throughout Europe prompted The Game Conservancy Trust, with support from English Nature and the World Wide Fund for Nature (UK), to establish a dedicated research programme focused on the species' breeding ecology. In this paper, we outline the biology of the species based on the results of a number of studies undertaken across Europe. We also present the findings and recommendations of our intensive four-year study, undertaken between 1998 and 2001, to show how the breeding biology of the species has changed over the last 40 years.

Range and distribution

The Turtle Dove is a small, slim member of the Columbidae, with a thin neck, a protruding head and deep chest, giving it a pigeon-like form, but with a long, wedge-shaped tail and swept-back wings. The sexes are broadly similar, but females are slightly smaller than males and somewhat less brightly coloured. Four races of Turtle Doves occur in the Western Palearctic, with nominate *turtur* found throughout much of Europe and western Asia. Slightly smaller and paler, with more white on the belly, *S. t. arenicola* occurs across North Africa (including the Balearics) and into the Middle East. The two remaining races are much more restricted geographically, with *S. t. hoggara* (also smaller and paler than nominate *turtur*, with broader



Gordon Langsbury

23. Turtle Dove *Streptopelia turtur*, Austria, May.

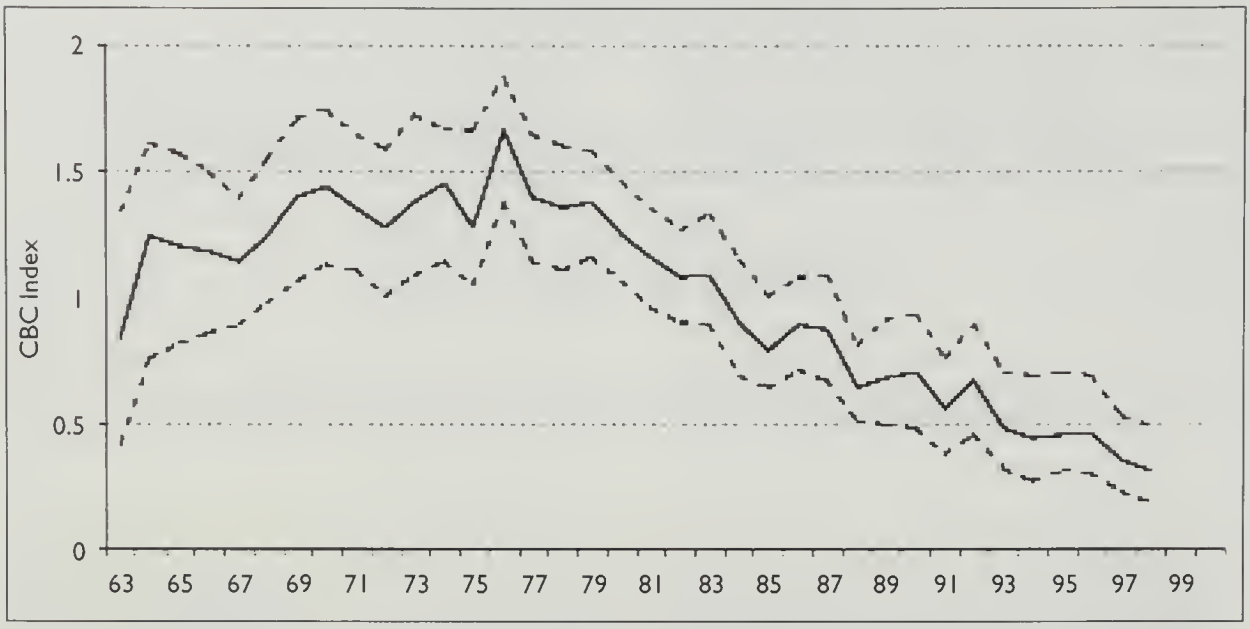


Fig. 1. Index of abundance of Turtle Doves *Streptopelia turtur* in Britain from 1963 to 1998, derived from BTO Common Birds Census data. The index (solid line) and the 95% confidence limits (dashed lines) are shown.

edging on the wing-coverts and on the tail) inhabiting the central Saharan mountains, and *S. t. rufescens* (more distinct than the other races, being smaller and more richly rufous-coloured) in Egypt and northern Sudan (Cramp 1985; Gibbs *et al.* 2001). Both *turtur* and *arenicola* are true migrants, spending the winter (late October to late March) chiefly in the Sahel region of Africa, roughly between 10°N and 20°N. The other two races are thought to be sedentary or undertake only small migratory movements (Cramp 1985).

In the breeding season (early May to mid August), the range of *turtur* extends from the Mediterranean to all but the most northern areas of Europe. In Britain, at the northwest edge of the species' breeding range, it is a lowland bird, favouring warm, dry conditions and avoiding the higher ground and rainfall of the west and north (Gibbons *et al.* 1993). Consequently, Turtle Doves are concentrated in the most intensively farmed, and now predominantly arable, areas of Britain.

Population trends in Britain and Europe

Survey and census work organised by the BTO suggests that numbers of Turtle Doves in Britain declined by 70% between 1968 and 1999 (Baillie *et al.* 2002), with a 25% contraction in range between the 1968-1972 and 1988-1991 breeding Atlases (Gibbons *et al.* 1993). This sharp decline commenced in 1979, following a lengthy period of apparent increase and range expansion from at least the mid nineteenth century (Spencer 1965; Duckworth 1992; Holloway 1997). Some local declines were apparent from the 1950s (Goodwin 1989), but trends from census work suggest that the period of general increase lasted until about 1978/79 (Marchant *et al.* 1990). A few local studies showed that numbers of Turtle Doves fluctuated in a pattern similar to the national trend (Hongell & Saari 1983; Miller 1992). From the late 1970s, however, a sustained decline in the breeding population in Britain became apparent, and this continues today (Baillie *et al.* 2002) (fig. 1). The decline has been so severe that the majority of the British population is now restricted to southern and eastern counties of England and, by extrapolation from the 1988-91 census and subsequent rates of decline, probably numbered only about 30,000 pairs in 2001. These population trends are of such concern that Turtle Dove is now recognised as a 'Red List' species of conservation concern in the UK (Gregory *et al.* 2002), and the UK Government has placed it on the list of priority species considered by the UK Biodiversity Action Plan. One of the recommendations of the UK Species Action Plan for the Turtle Dove is to undertake an autecological research project to identify the cause of the recent decline, in order to form a recovery plan (Anon 1998).

This pattern of range expansion followed by recent decline has been repeated elsewhere in Europe, with evidence of local downturns being noted from the 1950s onwards (Holzwarth 1971; Kraus *et al.* 1972; Cederwell 1978; Hongell & Saari 1983; Bijlsma 1985; Yeatman-Berthelot & Jarry 1995). Although census and

migration data are often rudimentary or non-existent, it is believed that, on a European scale, the decline of the Turtle Dove occurred from the mid 1980s onwards, particularly in western Europe (Tucker & Heath 1994; Heath *et al.* 2000). Turtle Dove is now a Category 3 species of European conservation concern (SPECs): a 'species whose global populations are not concentrated in Europe, but have an Unfavourable Conservation Status in Europe' (Heath *et al.* 2000).

Previous research on the Turtle Dove

Until recently, the only major ecological study of the Turtle Dove in Britain was completed in the early 1960s (Murton *et al.* 1964; Murton 1968). In 1996, a pilot study was undertaken (by The Game Conservancy Trust, funded by English Nature) to collect basic information on the ecology of the Turtle Dove and to test the methodology for a more detailed study (Calladine *et al.* 1997). The factors causing its recent decline, in a modern agricultural environment which has changed considerably since the 1960s (Grigg 1989), and the stages of its life history at which those factors operate, were therefore unknown before a study undertaken by The Game Conservancy Trust in the late 1990s (Browne & Aebischer 2001; Browne 2002).

More widely, the breeding biology of the Turtle Dove has been investigated in Bulgaria (Nankinov 1994a, Nankinov 1994b), (the former) Czechoslovakia (Pikula & Beklova 1984), France (Genard 1989), Germany (Holzwarth 1971; Kraus *et al.* 1972), The Netherlands (Bijlsma 1985), Portugal (Dias & Fontoura 1996; Dias *et al.* 1996), Spain (Peiró 1990), Sweden (Cederwell 1978), and in the southern Urals (Kotov 1974). Other studies have looked at specific aspects of Turtle Dove biology, including diet (Garzón 1974; Kiss *et al.* 1978; Jimenez *et al.* 1992; Dias & Fontoura 1996) and habitat requirements (Aubineau & Boutin 1998). Turtle Dove migration was documented by, for example, Ash 1956, Rappe 1965, Marchant 1969, Bourne & Beaman 1980, Mountfort 1981, Genard 1989, Nankinov 1994b and Aebischer 2002, and the biology of the species on its wintering grounds in Africa by Morel & Morel 1979, Morel 1985 and Morel 1987.

Migration

The Turtle Dove is the only British member of the pigeon family to undertake a long-distance migration, travelling up to 4,000 km twice a year between breeding and wintering grounds. The species' annual migration, combined with its exclusively granivorous diet, sets it apart from all other farmland bird species in Britain. After breeding, Turtle Doves begin to leave Britain in August, with the last birds departing



Stephen Browne

24. Turtle Doves *Streptopelia turtur* are found in a variety of habitats on their wintering grounds in western Africa, including scrub, open woodlands, savannah and agricultural land; the open scrub with low-density cattle browsing shown here (in The Gambia) would be a typical backdrop for encountering the species in winter.

in October and November. Their migration route takes them through western France, central and western Iberia, along the Atlantic coast of Morocco, and through Mali and Senegambia into western Africa. The main migration period is between mid August and late October, when most birds arrive in western Africa. Migration is thought to be mainly nocturnal, but there is a diurnal component at times (Guyomarc'h 1998). Turtle Doves tend to migrate in groups of 5-30 individuals, but flocks of over 100 are reported regularly; large congregations, of up to 1,000, can occur in food-rich areas, such as fields of ripe sunflowers *Helianthus* (Aebischer 2002). Spring migration commences during February-March, when huge flocks of many thousands of birds can occur in Mali and Senegambia (Curry 1974; Morel & Morel 1979, 1988). Turtle Doves arrive in Britain from mid April through to June, with the main influx during May (see Aebischer 2002 for an overview).

In recent years, the autumn migration of Turtle Doves in the UK has taken place eight days earlier, on average, than in the 1960s (Browne & Aebischer 2003a); concomitantly, their breeding season is now some 12 days shorter, on average, than 40 years ago (fig. 2). For some bird species, it has been shown that a recent increase in average temperatures, attributed to global warming, has altered the timing of migration, but this relationship has not been established for Turtle Doves (Tryjanowski *et al.* 2002; Browne & Aebischer 2003a) and it is likely that factors other than temperature (e.g. day length) may trigger the start of migration for this species (Lofts *et al.* 1967). One consequence of this lack of response in migratory behaviour to increasing global temperature is that, like some other migrant species, such as Pied Flycatcher *Ficedula hypoleuca* (Both & Visser 2001), the timing of the Turtle Dove's breeding season and food supply may now be asynchronous. Studies have shown that the fruiting of various plants now occurs earlier, in response to increasing temperature (e.g. Walther *et al.* 2002), and it is possible that the peak period of Turtle Dove breeding is now out of phase with the peak in food availability, a situation which may have contributed to the species' decline in recent years (Browne & Aebischer 2003a).

Hunting

Little accurate information is available on the numbers of Turtle Doves taken by hunters (see Boutin 2001). The Turtle Dove is a traditional quarry species in many European countries, particularly those bordering the Mediterranean, and hunting is legal in seven EU countries in autumn: Austria, France, Greece, Italy, Malta, Portugal and Spain. All these countries operate an open season, and although national or regional legislation controls the exact opening date of that season, EU regulations ensure that this is not before 15th August. This prevents resident breeding populations from being targeted specifically, and it is primarily migrating

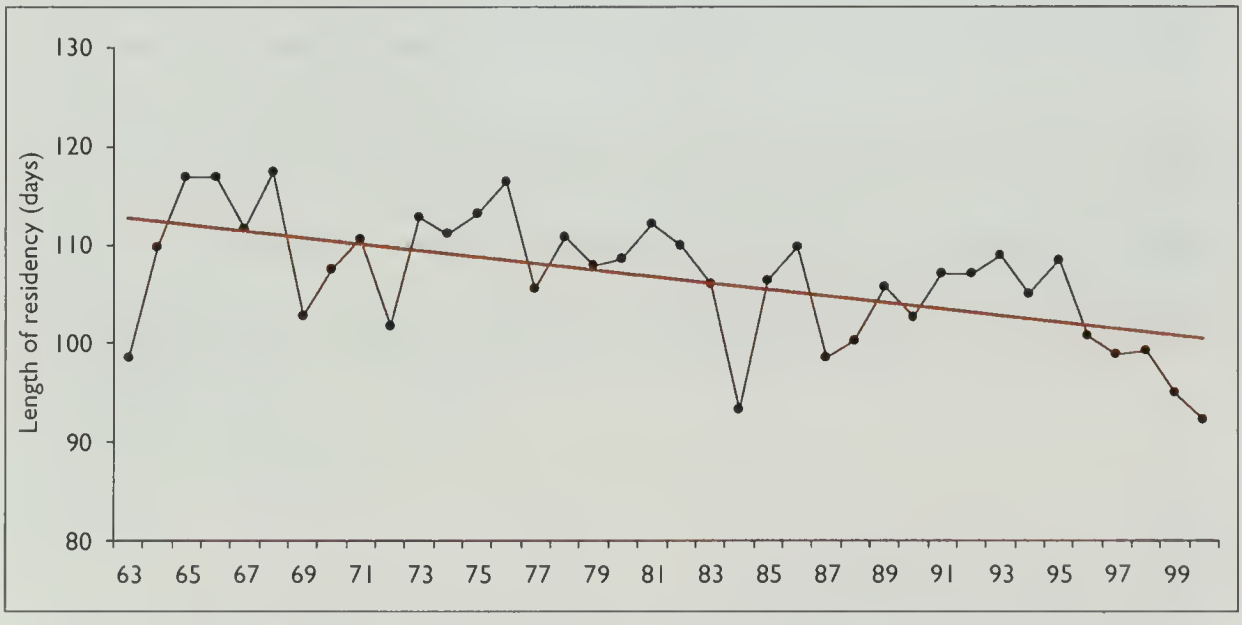


Fig. 2. Length of residence of Turtle Doves *Streptopelia turtur* in Britain during the period 1963 to 2000. The values represent the difference between mean arrival and departure dates at six bird observatories in south and east England. Redrawn from Browne & Aebischer (2003a).

birds which are shot. A bag limit per hunter (i.e. the number each hunter can shoot legally per day) is set in Greece, Portugal and Spain. In addition, Turtle Doves are hunted illegally in France during the spring. Although accurate data on the numbers hunted each year do not exist, and estimates are difficult, the total annual hunting bag for the EU is thought to be of the order of 2-4 million birds (Boutin 2001); it is not possible to assess the long-term trend of the EU hunting bag. In Morocco, the estimated bag is up to 140,000 birds, and because the open season runs from mid June to early August, most are of the race *arenicola*. Hunting of Turtle Doves is not permitted in their wintering areas, and information is so limited that the numbers of any taken illegally cannot be estimated.

Overwinter ecology

Little is known about the ecology of Turtle Doves on their wintering grounds (see Cramp 1985 for overview), certainly in recent times. The overwintering range of the migratory *turtur* and *arenicola* is thought to extend from Senegambia and southern Mali south to the Gulf of Guinea, and from the Atlantic coast east to Cameroon and Nigeria. Although *arenicola* probably occurs in the east of this range, with *turtur* in the west, there appears to be considerable overlap. Both races are known to occur in Senegal and Mauritania during winter. They are found in a variety of habitats, including acacia scrub, open woodlands, savannah plains and agricultural land. Large flocks have been recorded feeding on wheat fields, harvested rice fields and on quaysides where peanuts are being loaded (Barlow *et al.* 1997). They eat a wide variety of seeds from wild and cultivated plants. Huge flocks, of up to a million birds, most likely to be *arenicola*, have been recorded at food sources, water and at roost, typically in acacia scrub or waterlogged woodland. Turtle Doves tend to drink at first light or at sunset, when the largest congregations are usually seen. Although they appear able to feed during the intense heat of the day, they will take shelter in shade under trees and bushes during extreme heat (Curry 1974); they often associate with Vinaceous Doves *Streptopelia vinacea* while foraging or resting (Morel & Morel 1988). Recent poor rainfall in the Sahel, deforestation, scrub clearance and improvements to agriculture in western Africa are thought to have contributed to the decline of the species (Marchant *et al.* 1990; Jarry 1995), although this is unsubstantiated by any recent studies.

Habitat use on the breeding grounds

The habitat requirements of Turtle Doves away from the nest-site have been little studied. In general landscape terms, Turtle Doves occur in a range of open lowland habitats which are interspersed with hedges, scrub and small woods (e.g. Kraus *et al.* 1972, Bijlsma 1985). They avoid open areas such as heathland and also large tracts of extensive woodland, but occur in young plantations and managed (thinned) woodland (e.g. Genard 1989). Turtle Doves appear to favour warm areas, being found in those parts of Germany where the mean daily maximum July temperature is at least 17°C (Kraus *et al.* 1972), and in Britain where the equivalent temperature is at least 19°C (Norris 1960).

An analysis of 30 BTO Common Birds Census (CBC) plots showed that, by 1995, the mean density of Turtle Doves was 0.8 territories per km² on 15 farmland plots and 10.1 territories per km² on 15 woodland plots (Browne *et al.* 2004). Browne & Aebischer (2004) recorded farmland densities of 4.1-4.6 territories per km² in Suffolk and 0.3-0.5 territories per km² in Lincolnshire. Densities of 6.5 territories per km² in woodland and over 40 territories per km² in



Olaf Lessow

25. Turtle Dove *Streptopelia turtur*, Austria, June 2000.

scrub have been recorded in northeast Essex (C. F. Mason pers. comm.). Other reported densities for Turtle Doves in Britain are 1.4 territories per km² on farmland and 2.2 in woodland during 1968-72 (Sharrock 1976); corresponding figures of 0.6 and 2.6 territories per km² during 1988-91 (Gibbons *et al.* 1993); and 1.6-2.1 territories per km² on farmland in eastern England (Mason & Macdonald 2000). Other studies across the species' breeding range have shown that Turtle Dove density varies from 1.4 to 30.0 pairs per km² in a range of wooded and farmland habitats (Holzwarth 1971; Kraus *et al.* 1972; Bijlsma 1985; Genard 1989; Dias & Fontoura 1996).

In Britain, it appears that suitable woodland areas support densities of Turtle Dove territories up to 6.5 times higher than on farmland. This probably reflects the species' propensity to nest in overgrown bushes, with woodland areas being used predominantly for nesting and the arable areas for feeding. Studies by Fuller & Moreton (1987) and Hinsley *et al.* (1995) showed that use of woodland by Turtle Doves was governed by nest-site selection. Turtle Doves were associated with shrubby vegetation, avoided dense woodland and did not hold territories in coppice woodland until five years after coppicing, when mean tree height was 5.6 m and canopy cover was 66%. Within woodland habitats, Turtle Doves appear to favour scrub rather than pure woodland stands (Mason & Macdonald 2000). Woodland area is also important, with the minimum required being around 0.2 ha (Mason 2001).

On farmland, based on information extracted from 15 farmland CBC plots, density was related to the amount of suitable nesting habitat on each plot (Browne *et al.* 2004). As the length of hedgerow and length of woodland and scrub edge decreased within farmland, Turtle Dove density also decreased (fig. 3).

The home range of British Turtle Doves is highly variable (on average occupying some 83.5 ± 23.9 ha at one site and 497.3 ± 22.5 ha at another site), depending on habitat availability, and ranging from 0.3 ha to 1,130 ha (Browne & Aebischer 2003c). Information from radio-tracking suggests that Turtle Doves choose their territories in a non-random way. Cropped arable habitats were avoided and wooded ones most preferred, relative to availability. The latter reflects the species' behaviour of loafing near the nest-site or in tall trees and hedges, which is also where most territorial behaviour is conducted.

Social behaviour

Turtle Doves are monogamous and may form pairs which last for more than one breeding season (Cramp 1985). Some pairs are formed during migration but, in most cases, it would seem that the males arrive on the breeding grounds first, begin to deliver their continuous purring calls immediately and attract females quickly. Males generally call most frequently early in the morning and in the evening, and from favoured song-posts (Calladine *et al.* 1999). The calls may be followed by a display flight, which is usually triggered by the arrival

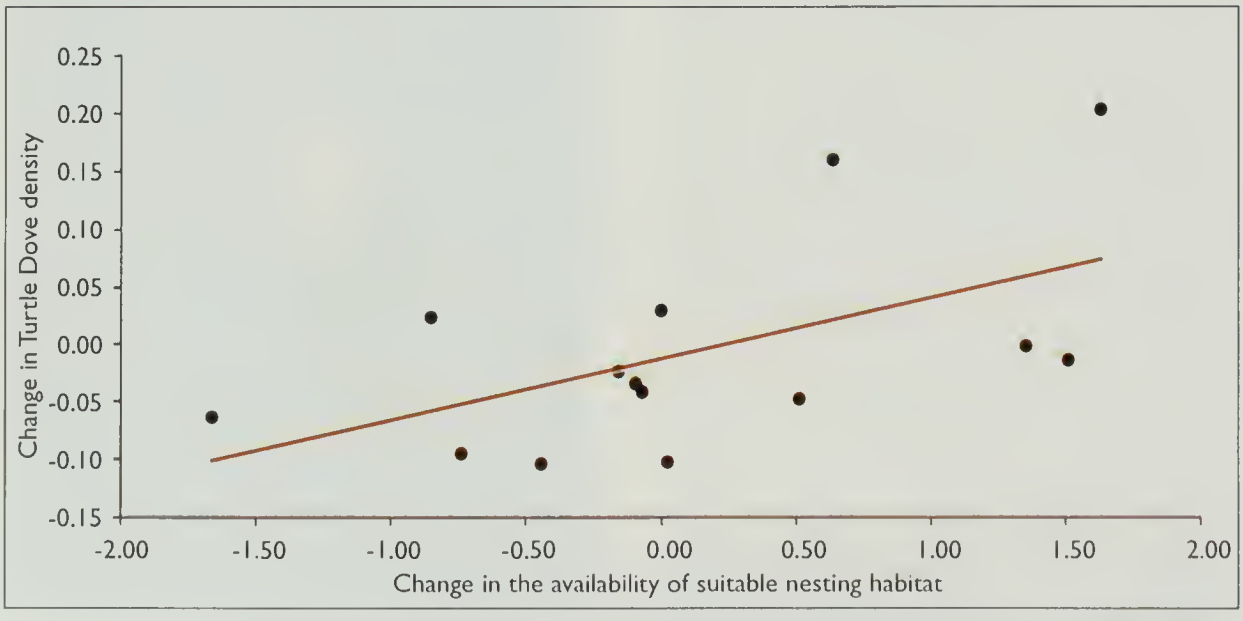


Fig. 3. Relationship between the amount of suitable nesting habitat and the density of Turtle Doves *Streptopelia turtur* on 15 BTO farmland CBC plots during 1965-1995. Redrawn from Browne *et al.* (2004).



Stephen Browne

26. During the breeding season, Turtle Doves *Streptopelia turtur* will use a range of open lowland habitats. Most nests are found in hedgerows and scrub, with smaller numbers in young plantations and woodland, and in isolated bushes. Nests are typically in thorny bushes, but conifers, elder *Sambucus* and fruit trees are also favoured; dense woodland is generally avoided. This photo also shows the type of broad, weedy-edge habitat which is important for feeding.

of another Turtle Dove, apparently to further attract females or discourage males. The display flight consists of a steep, upward flight, with rapid wingbeats producing wing-clapping, followed by a long, slow, circular descending glide with wing- and tail-feathers outstretched, returning the bird to its original take-off point. If joined by a female, the calling male will also undertake a bowing display, in which he fluffs out his feathers, particularly around the throat, bobs his head up and down and takes small, two-footed jumps towards the female.

Pairs tend to aggregate in suitable nesting habitat and adjacent nests can be as close as 3 m (Cramp 1985). Further nesting attempts are made close to the first nest, often in the same bush and occasionally on top of the old nest. Breeding activities, including nest-building, incubation and tending the young, are undertaken by both parents, although the male appears to take on more of these activities than the female. During the breeding season, birds tend to roost near their nests, although occasionally they roost communally. Soon after breeding, young and adults disperse and do not form family groups. Consequently, Turtle Doves are usually observed singly or in pairs on their breeding grounds, although small flocks may form around food sources.

Breeding ecology

The breeding season begins upon arrival on the breeding grounds in late April, with the peak of nesting activity being in early June. Turtle Doves defend only a small area immediately around the nest-site, but utilise a much larger area for foraging. The size of these defended territories around the nest ranges from 0.75 to 8.90 ha, and they contain a higher proportion of woodland, grassland and other non-crop habitats, and a lower proportion of cropped habitats, than expected by chance (Browne & Aebischer 2004). The majority of nests are found in hedgerows and scrub, with some within young plantations and woodland, and in isolated bushes; most are in thorny bushes, but also in conifers, elder *Sambucus* and fruit trees (Browne & Aebischer 2004; Browne *et al.* 2005).

The nest is usually a small platform of thin sticks, built by the female with the occasional assistance of the male. Sometimes other materials, such as thin wire and plastic, are utilised too. Many nests are built with climbers as an integral part of the nest (Aubineau & Boutin 1998; Browne & Aebischer 2004), and it is believed that these provide additional support to the nest structure. Nests are usually 0.1-20.0 m above ground level, the majority being 1-3 m high (Browne & Aebischer 2004). Nest height

varies according to habitat; for example, nests in conifers tend to be higher as the lower levels of conifers are generally unsuitable. The majority of nests are located within 1 m of the edge of the bush or tree.

Clutches vary from one to three eggs, with two being typical. Turtle Doves may produce up to three successful broods in a season, but may nest more than three times if a brood is lost and a replacement clutch laid. Incubation is undertaken by both sexes and lasts for 14 days. Nestlings are cared for by both parents and leave the nest after 15 days. Birds are able to breed in their second calendar-year. About half the eggs laid are successful, with the remainder being predated, deserted or failing to hatch owing to infertility (Murton 1968; Cramp 1985; Browne & Aebischer 2004).

The likelihood of various outcomes of modern-day nesting attempts is different from that during the 1960s (Murton 1968; Browne & Aebischer 2004). During Murton's study, 6% of nests were abandoned, 56% of nests were lost to predation and 39% fledged young, compared with 15%, 37% and 47% respectively during the late 1990s. In other words, abandonment rates were lower and predation rates higher in the 1960s, but in the 1990s hatching success was higher, yet fledging success was lower. Overall, the success of an individual breeding attempt appeared to be approximately the same in the 1990s as in the 1960s.

In recent years, the breeding productivity of Turtle Doves has fallen dramatically. In the 1960s, Murton (1968) found that, on average, Turtle Doves laid 2.9 ± 0.1 clutches per year, which produced on average 1.6 ± 0.1 fledged young per pair. Today, each pair produces 2.1 ± 0.3 clutches and 1.3 ± 0.2 young fledge per pair (Browne & Aebischer 2004). This decline in productivity is a result of fewer breeding attempts and is related to a contraction of the breeding season (see above and fig. 2); for example, in the 1960s, 24% of nesting attempts were started in August compared with just 5% during the 1990s (Browne & Aebischer 2004; fig 4). This, in turn, links in with the species' markedly earlier autumn migration from Britain (discussed above), and implies that the reduced number of nesting attempts and earlier cessation of breeding identified by Browne & Aebischer (2004) is likely to apply on a wide geographical scale. Furthermore, an analysis of approximately 1,900 BTO Turtle Dove Nest Record Cards has shown that there has been no discernable difference in any aspect of the species' breeding ecology over the last 40 years (Browne *et al.* 2005). It is clear that the reduction in the number of nesting attempts per bird per year has caused the reduction in breeding performance.

Diet on the breeding grounds

Early studies identified seeds from wild plants (weeds) as the main component of Turtle Dove diet, with seeds of locally cultivated crops making up the remainder. The seeds from two species, Common Fumitory *Fumaria officinalis* and Common Chickweed *Stellaria media*, were particularly important (Murton *et al.* 1964). In

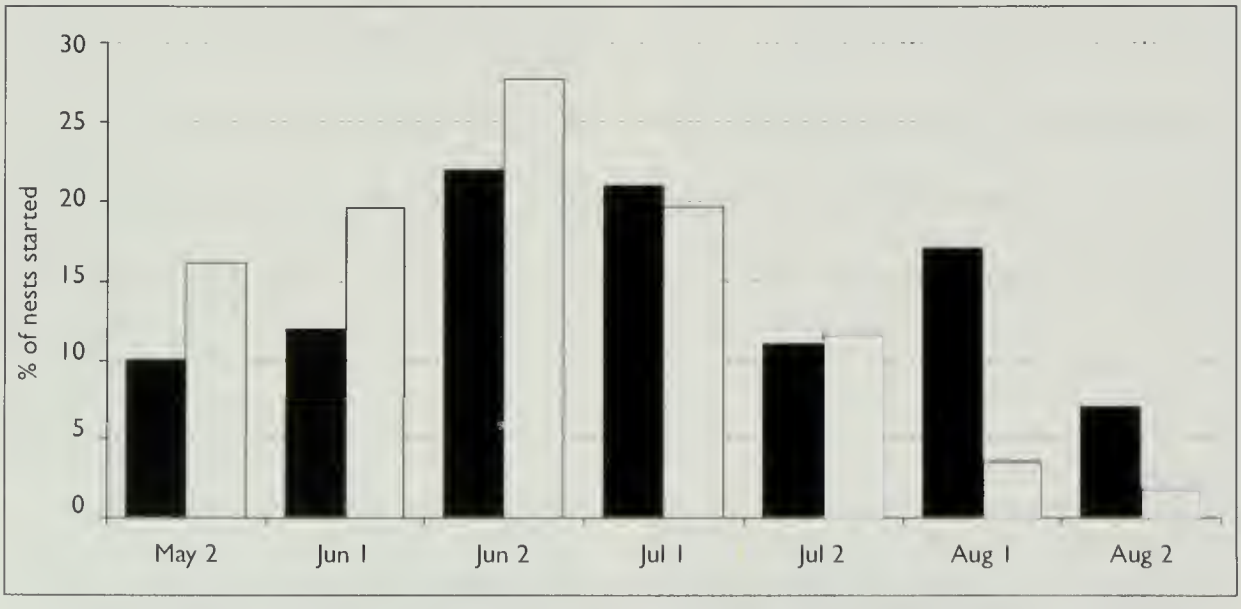


Fig. 4. Proportion of nests started in each half-month period of the Turtle Dove *Streptopelia turtur* breeding season in the early 1960s (black bars) and the late 1990s (white bars). Redrawn from Browne & Aebischer (2004).

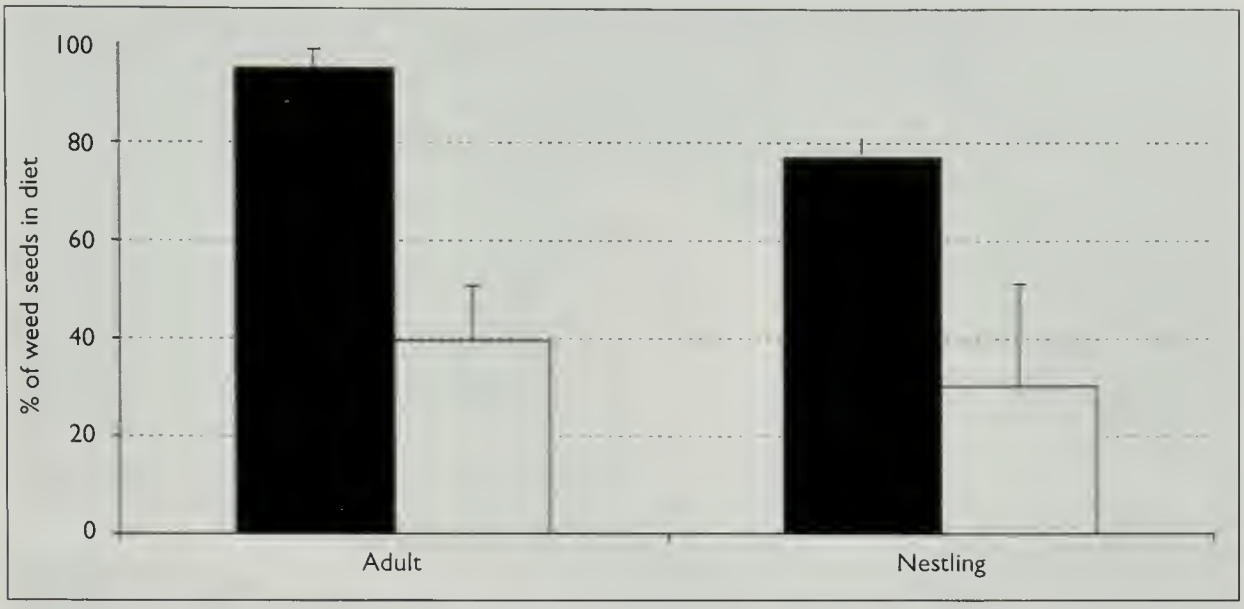


Fig. 5. Proportion of weed seeds in the diet of adult and nestling Turtle Doves *Streptopelia turtur* in the early 1960s (black bars) and the late 1990s (white bars). Error bars show ±1 standard error. Redrawn from Browne & Aebischer (2003c).

areas where cultivated seeds were taken, this usually coincided with harvest time. Today, seeds from cultivated plants (chiefly wheat and rape) are the main constituents of Turtle Dove diet, and comprise, on average, 69% of the seeds identified in the faecal samples of nestlings, and 60% of the seeds taken by adults (Browne & Aebischer 2003c; fig. 5). Forty years ago, the percentages were 23% and 5% respectively (Murton *et al.* 1964). It is likely that these differences are real and do not reflect different methodologies.

The foraging behaviour of Turtle Doves is now markedly different from that recorded in the 1960s, when they fed predominantly on clover leys, hay fields and stooked wheat (Murton *et al.* 1964). Today, they feed in a range of different habitat types, but principally those which include spilt grain: in farmyards, animal feed and non-arable habitats. In almost all cases, birds recorded on crops are feeding on the weed strip around the edge of fields, weedy areas that sprayers have missed, on crops that have limited herbicide use (e.g. daffodils) and on stubbles after harvest (Browne & Aebischer 2003c). Recent changes in agricultural practices have removed or reduced many of the feeding opportunities available in Murton's day. At the same time, increased use of herbicides and fertilisers and more efficient screening procedures have greatly reduced the abundance and diversity of weeds and weed seeds throughout the farmed environment, compared with 40 years ago (O'Connor & Shrubb 1986).

Turtle Doves not only utilise different habitats for feeding nowadays, but also undertake relatively large foraging trips. On average, Turtle Doves travelled 0.5-1.5 km per trip during the 1990s, but some feeding sites were located up to 10 km from the nest (Browne & Aebischer 2003c). Such relatively long trips probably reflect a lack of suitable feeding opportunities closer to nesting areas.

The greatest influence on these dietary changes is likely to be the spatial and temporal availability of food during the breeding season. The seeds from crops are generally most widely available immediately before, during and after harvest, at the end of the Turtle Dove's breeding season. Earlier availability is dependent on spilt grain, which usually occurs during its transport from storage. When cereal prices are high, farm-based grain stores are emptied earlier than during times when prices are low. Consequently, in some years, spilt grain may be available to Turtle Doves during the breeding season, in other years it may not, and this depends solely on market pressures. Cultivated seed availability is not only limited and variable temporally, but also spatially. Whereas a weed-rich farming landscape would provide food for Turtle Doves throughout their home range, there may be only one or two patches of spilt grain across a wide geographical area, forcing birds to travel large distances between nesting and feeding habitats.

Reasons for the species' decline in Britain

Habitat use and feeding ecology

Hedgerow and scrub removal has long been a



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27. First-winter Turtle Dove *Streptopelia turtur*, Scilly, October 2003.

feature of agricultural intensification (Pollard *et al.* 1974; Barr *et al.* 1993), and remaining hedges are often intensively managed. Most of these are cut annually (Macdonald & Johnson 2000), creating hedgerows which are usually too low and not wide enough for the Turtle Dove's needs. The territory distribution of Turtle Doves appears to be linked to availability of suitable nesting habitat, primarily bushes and trees in scrub, hedgerows, woodland edge, etc. Both the quantity and the quality of suitable habitat have declined in the modern farming landscape.

As described above, Turtle Doves now occupy relatively large home ranges, undertake long foraging trips and make little use of natural feeding sites, being much more dependent on (for example) spilt and stored grain and animal feed. The results from experimental work suggest, however, that, at the local scale, food provided by humans does not appear to improve breeding densities or success (Browne & Aebischer 2002). Diet has changed as well as feeding behaviour, from weed seeds to cultivated seeds (in broad terms). Although it appears that diet does not have a direct effect on breeding success, it seems likely that all the factors outlined here will combine to have a detrimental impact on the species.

Breeding ecology

Our data suggest that the reduction in length of the Turtle Dove's breeding season means that the number of nesting attempts would now be expected to be at least 20% lower than in the 1960s. The observed reduction in the number of clutches each pair lays is 45%, from 2.9 in the 1960s to 1.6 in the 1990s. In turn, the number of young that successfully fledge per pair has dropped from 2.1 in the 1960s to 1.3 in the 1990s. This reduction in breeding output would lead to a per annum decrease of approximately 17% in the British breeding population of Turtle Doves if replicated throughout its British range. The ultimate cause of the reduction in breeding output is not known, but it is possible that changes in the spatial and temporal availability of food and the associated shift in diet may affect adult body condition. Birds may struggle to achieve and maintain suitable body condition throughout the breeding season and as a result may finish breeding earlier, although this remains unproven (Browne & Aebischer 2003b).

Hunting

The limitations of the available data make it difficult to assess the importance of hunting. For example, a worst-case scenario, using the lowest European population and highest bag estimates (Hagemeijer & Blair 1997; Boutin 2001) and a breeding productivity of 1.3 fledged young per pair (Browne & Aebischer 2004), could predict

up to 40% of the autumn population being killed, but the comparable best-case scenario (highest population and lowest bag estimates) predicts that only 4% is killed. Until accurate information on the numbers of Turtle Doves being hunted is available, it is impossible to make a scientifically sound statement on the contribution of hunting to the decline of the Turtle Dove.

Changes on overwintering areas

For some migrants that overwinter in sub-Saharan Africa, population declines have been linked with drought on the wintering grounds (e.g. Winstanley *et al.* 1974, Cowley 1979, Marchant *et al.* 1990, Peach *et al.* 1991). Decreased rainfall, rising temperature and other changes linked to desertification in the Sahel, perhaps linked to global warming, may indeed have important consequences for Turtle Doves breeding in Europe. Nonetheless, the decline of the Turtle Dove did not immediately follow the severe drought of 1968/69, when many other species that winter in the Sahel suffered a severe population crash (Marchant *et al.* 1990). Indeed, Turtle Doves *increased* during the 10-15 years following the 1968/69 drought, and it was not until 1980 that the population began to decline (Marchant *et al.* 1990). Unlike the species that were badly affected by that drought, the Turtle Dove is solely granivorous; it is possible that its food supply was less severely affected and it may have adapted to become more mobile, and exploit new food sources, such as rice and peanuts, that arose from improved agriculture in the region (Cramp 1985; Marchant *et al.* 1990; Barlow *et al.* 1997). In addition, forest and scrub clearance in overwintering areas, for agriculture and to provide fuel, has also been cited as a possible cause of the Turtle Dove's decline (Jarry 1994), particularly through the removal of suitable roosting sites. The impact of this is likely to be relatively small, however.

Common factors causing Turtle Dove and other farmland bird declines

Recent studies have highlighted a number of ecological changes that have affected Turtle Doves and other farmland species alike. The loss of nesting habitat, primarily hedges and scrub, is thought to restrict the territory distribution of Grey Partridge *Perdix perdix* (Rands 1986), Red-backed Shrike *Lanius collurio* (Vanhinsberg 2000) and Yellowhammer *Emberiza citrinella* (Bradbury & Stoate 2000) as well as of Turtle Dove. A reduction in breeding performance, brought about by a falling number of nesting attempts per pair, has consequences for the population size of Song Thrush *Turdus philomelos* (Thomson & Cotton 2000) and Linnet *Carduelis cannabina* (Moorcroft & Wilson 2000), as well as of Turtle Dove. The decrease in food availability, attributable either directly or indirectly to pesticide use, has been shown to affect Grey Partridge (Potts 1986), Sky Lark *Alauda arvensis* (Donald & Vickery 2000), Red-backed Shrike (Vanhinsbergh 2000), Yellowhammer (Bradbury & Stoate 2000) and Corn Bunting *E. calandra* (Brickle & Harper 2000), as well as Turtle Dove. Such findings make it difficult to separate the decline of the Turtle Dove, and of many other farmland bird species, from changes in land management associated with recent agricultural intensification, although the potential negative effects of hunting and changes on the overwintering grounds cannot be dismissed.

Conservation measures

The Turtle Dove UK Species Action Plan (Anon



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28. Edge habitats are now crucial for Turtle Doves *Streptopelia turtur* in the modern agricultural landscape. During the breeding season, most birds recorded feeding on cropped land are concentrated on the strip of weeds around the edge of fields, weedy areas that sprayers have missed, farm tracks or on crops that have limited herbicide use.

1998) had the following objectives and targets:

- In the short term, halt or reverse the decline in numbers of the Turtle Dove by 2003 so that the Breeding Bird Survey (BBS) index is at least at 1996 levels;
- In the long term, see a sustained recovery in numbers so that the BBS index is at least 50% higher than 1996 levels by 2008.

The following recommendations will help to deliver these targets in the UK. Although tailored towards Turtle Doves, these are also likely to help other farmland wildlife.

Management options

Nesting habitat

Turtle Doves have specific requirements for the types of tree and bush in which they nest, and management needs to recreate suitable hedgerows and patches of woodland or scrub, and ensure that intensively managed hedgerows are restored and replanted. Hedges should be allowed to become overgrown with climbers and reach a minimum height of 4.5 m and width of 3 m.

Food availability

Turtle Doves like to feed amongst short, sparse vegetation with a predominance of seed-rich weedy plants. Management needs to encourage patches of arable plants and provide alternative sources of seed. Within or adjacent to arable fields, areas should be tilled annually each autumn and receive limited herbicide applications (only those targeted specifically at pernicious agricultural weeds) to allow the establishment of weed-rich areas, with low open vegetation cover. Alternatively, or additionally, such areas can be established by sowing seed mixes. Existing herb-rich grassland should be protected and managed for a late hay crop (cut after 15th July). These grasslands should be encouraged by de-intensifying the use of improved grassland or by arable reversion. Post-harvest cereal, rape and pea stubbles should be left until at least the end of August to allow good pre-migratory feeding. Supplementary food, such as waste grain or tailings, is best provided close to suitable nesting habitat.

Policy options

The current framework of agri-environment policies allows many of the conservation management recommendations for Turtle Doves to be incorporated within modern agricultural systems. Ongoing reform of the Common Agricultural Policy, scheduled for 2005, should encourage farmers to manage land in a more environmentally friendly fashion. This will allow the introduction of compulsory cross-compliance, whereby a farmer receives agricultural subsidy (e.g. Arable Area Payments) conditional on compliance with environmental standards; payments may be reduced or cancelled if standards are not met. Future policy also needs to address those areas which are currently not adequately covered, including the widespread management of arable field margins, the re-establishment of arable fields in pasture-dominated areas, the planting and management of scrub and the provision of supplementary food.

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Report on scarce migrant birds in Britain in 2002

Part 2: American Wigeon to Ring-billed Gull

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This is the second part of this eighth annual report, which discusses the remaining non-passerine species, from American Wigeon *Anas americana* to Ring-billed Gull *Larus delawarensis*. Part 1 of the report, which covered European Bee-eater *Merops apiaster* to Little Bunting *Emberiza pusilla*, has already been published (*Brit. Birds* 97: 647-664). Among the species considered here, American Wigeon and Night Heron *Nycticorax nycticorax* make their first appearance, since BBRC ceased to consider records of these two species at the end of 2001. In 2002, Green-winged Teals *Anas carolinensis* appeared in record numbers, it was the second-best year on record for Ring-necked Duck *Aythya collaris*, White Stork *Ciconia ciconia* and Common Crane *Grus grus*, and the third-best for American Wigeon and Honey-buzzard *Pernis apivorus*. Conversely, the numbers of several other species, including Buff-breasted Sandpiper *Tryngites subruficollis* and Purple Heron *Ardea purpurea*, were some of the lowest recorded in recent years. As would be expected, however, most species occurred in roughly average numbers, showing no particular peaks or troughs. It is only by annual monitoring of these species, based upon records submitted to, and accepted by, local or regional records committees, that short-term anomalies and long-term trends can be detected. Readers are referred to the introduction to Part 1 of this report for fuller details of the nature of the records it contains.

Compared with the calculation of annual totals for most of the species covered in Part 1, it is notoriously difficult to assess the numbers of certain species covered here, particularly some wildfowl and Ring-billed Gulls. In addition to newly arrived birds, some individuals recorded in previous years return to traditional wintering sites or migration stopover sites, while others move between sites, both within and between years. With so many birds of some species occurring or reappearing, movements of individuals between years, across county boundaries, or between regions of the country are becoming almost impossible to track. Nevertheless, we have made every effort to try to estimate the number of new individuals arriving (though we acknowledge that our totals may often include overestimates), with the help of local knowledge and (where known) the age profile of individuals. We are extremely grateful to County Recorders and Records Committees, who are an invaluable component of such estimates, and also to observers who diligently establish the age of certain species, since this is often the key indicator of whether or not an individual is likely to be newly arrived.

Readers should note that only a selection of maps and graphs are presented in this report, but that those for all species can be found at http://www.scarce-migrants.org.uk. In preparation for the 2003 report, we urge regional and local recorders to submit their data for the relevant species to Peter Fraser, either at the address below or, preferably, at statistician@bbrc.org.uk, as soon as possible.

Table 1. These data show the relative abundance of each species in 2002, by ranking the number of individuals recorded during the year in the context of previous annual totals. Note that the number of years of comparable data varies according to species. This table thus highlights in more detail which species were recorded in relatively high or low numbers in 2002 (for example, 2002 was the second-best year on record for Common Crane *Grus grus*).

Species	No. in 2002	Year rank	Years of data
Green-winged Teal *Anas carolinensis*	52	1	45
Ring-necked Duck *Aythya collaris*	39	2	45
White Stork *Ciconia ciconia*	53	2	45
Common Crane *Grus grus*	243	2	45
American Wigeon *Anas americana*	23	3	45
Honey-buzzard *Pernis apivorus*	185	3	17
Pectoral Sandpiper *Calidris melanotos*	75	7	35
Night Heron *Nycticorax nycticorax*	13	8	45
Spotted Crake *Porzana porzana*	64	9	17
Grey Phalarope *Phalaropus fulicarius*	159	10	17
Ring-billed Gull *Larus delawarensis*	70	10	30
Red-necked Phalarope *Phalaropus lobatus*	27	11	17
Cory's Shearwater *Calonectris diomedea*	225	12	45
Rough-legged Buzzard *Buteo lagopus*	31	12	29
Kentish Plover *Charadrius alexandrinus*	24	12	17
Sabine's Gull *Larus sabini*	108	12	35
Temminck's Stint *Calidris temminckii*	100	13	35
Surf Scoter *Melanitta perspicillata*	10	14	45
Purple Heron *Ardea purpurea*	12	29	45
Buff-breasted Sandpiper *Tryngites subruficollis*	6	32	45

Systematic List

Interpretation of the statistics used and quoted in the species accounts should take into consideration the following points:

- Increasing numbers of field observers, armed with greater knowledge and improved mobility, and spending more time in the field, must, to some extent, be responsible for the increase in the recorded numbers of certain species;

- Known breeding individuals (of such species as Common Crane *Grus grus* and Red-necked Phalarope *Phalaropus lobatus*) have been excluded from the report;

- Individuals remaining from one year to the next (e.g. overwintering Ring-necked Ducks *Aythya collaris*) have been counted only in their year of arrival;

- Returning individuals (e.g. Ring-billed Gulls *Larus delawarensis*) have, where possible, been counted only in their year of arrival, unless stated otherwise;

- Known escapes from captivity (e.g. some White Storks *Ciconia ciconia*) have been excluded;

- Statistics for some species for 2002, and to a lesser degree for earlier years, are incomplete because of the unavailability of data from some counties.

American Wigeon *Anas americana*

Number of individuals in 2002	Number of individuals in 1958-2002	Year rank	Highest annual maxima 1958-2002			Annual means 1958-2002				
			2000	1998	2002	1958-69	1970-79	1980-89	1990-99	2000-02
23	359	3	30	27	23	1	4	8	15	22

Prior to 2002, all records of this species in Britain were considered by BBRC but, as fig. 2 demonstrates, there has been a progressive increase in the numbers occurring in each decade since the 1960s. This increase brought an average of 15 per year during the 1990s, culminating in the record-breaking 30 in 2000. With such a large, and growing, number of records, this species clearly exceeded the occurrence threshold set by BBRC. The steady overall increase in records continued in 2002, when 23 presumed new birds were recorded (three of which were females), along with about nine returning or remaining individuals from 2001, which are excluded from the statistics presented here. New arrivals were seen in 18 recording areas, with three in both Suffolk and Nottinghamshire, and two in Cheshire. Three of the nine returning or remaining birds were seen in Shetland.

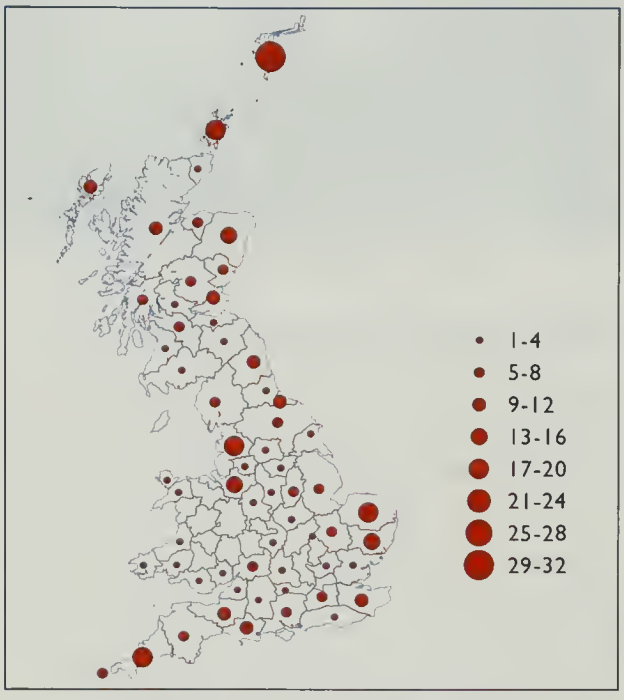


Fig. 1. Distribution of American Wigeons *Anas americana* in Britain during 1958-2002. This map shows the recording areas in which (presumed) newly arrived birds were seen, and confirms that American Wigeon is one of the more uniformly distributed scarce migrants to occur in Britain.

Slightly more were reported between January and May (13) than from September to December (10), though this may, in part, be a function of the fact that males are more easily detected once breeding-plumage features become apparent, as autumn progresses. Apart from a female at Minsmere, Suffolk, from 30th May to 14th June, no new arrivals were reported between those on 22nd April (at Cardiff Bay, East Glamorgan) and 22nd September (Holme Pierrepoint, Nottinghamshire).

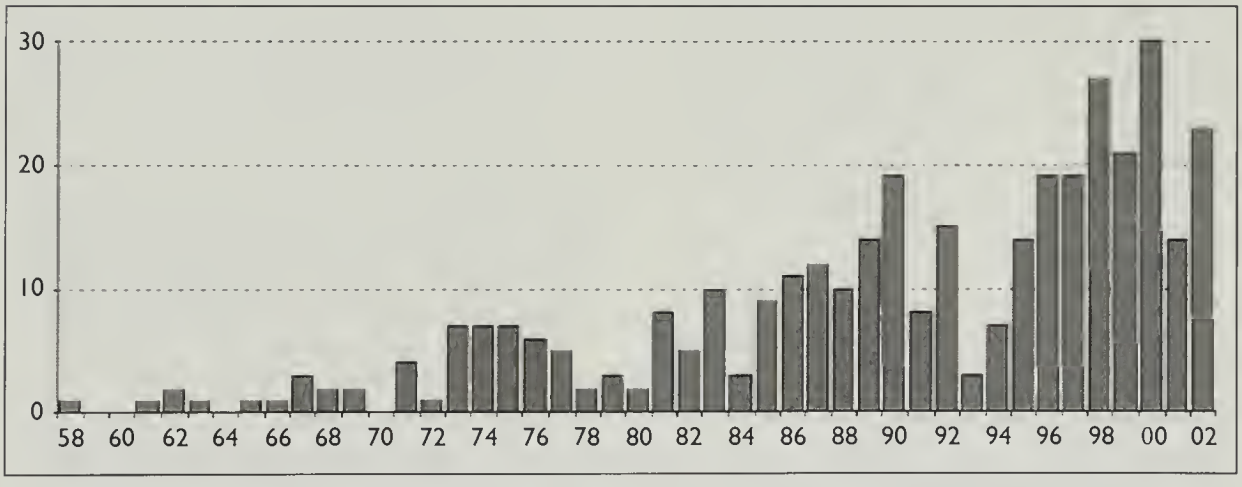


Fig. 2. Annual totals of American Wigeons *Anas americana* in Britain, 1958-2002. Note the marked upward trend in records during the period, especially from the late 1970s.



Mike Ashforth

29. Male American Wigeon *Anas americana*, Scalby Mills, East Yorkshire, October 2002.

Green-winged Teal *Anas carolinensis*

Number of individuals in 2002	Number of individuals in 1958-2002	Year rank	Highest annual maxima 1958-2002			Annual means 1958-2002				
			2002	1999	2000	1958-69	1970-79	1980-89	1990-99	2000-02
52	563	1	52	48	43	2	6	12	23	41

This species (then regarded as a subspecies of Eurasian Teal *Anas crecca*) was dropped from the list of taxa assessed by BBRC at the end of 1990. The data available suggest that 52 new birds arrived in 2002, while c. 15 others were identified as likely returning individuals. Establishing the age of Green-winged Teals can be difficult, but without this data it is difficult to judge how many of those seen in 2002 were certain new arrivals. Nonetheless, and even allowing for the possibility that some might have first crossed the Atlantic in previous years, 2002 was clearly the best year on record for Green-winged Teal. More significantly, the best three years have now occurred during the period 1999-2002, as shown in fig. 4 (opposite); numbers of Green-winged Teal are currently at an all-time high.

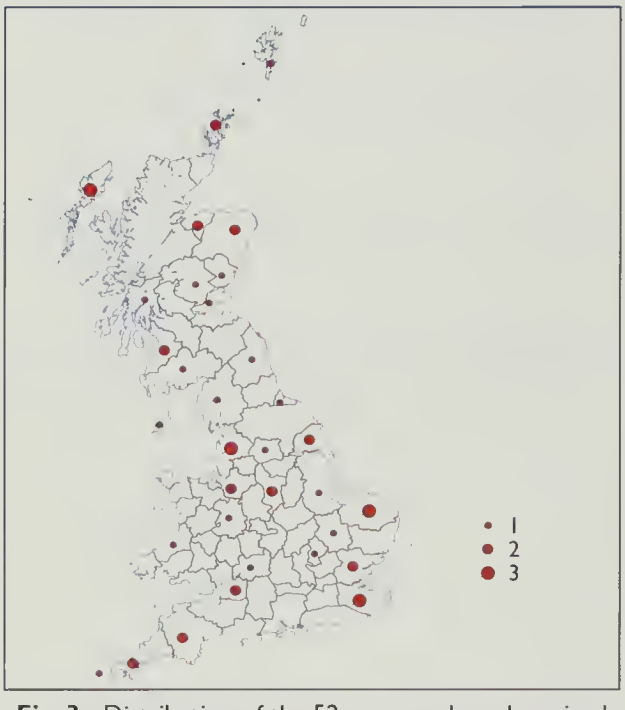


Fig. 3. Distribution of the 52 presumed newly arrived Green-winged Teals *Anas carolinensis* in Britain in 2002, the best year on record for this species. Since the mapped records all refer to males, the likely true figure for this species could well be in excess of 100 individuals.

There was a wide geographical spread of records throughout the country in 2002, although the south coast was rather poorly represented (fig. 3). Presumed new birds were found in all months except July, August and September (although this may be due partly to the difficulty of identifying males in eclipse plumage). There was no obvious influx period, but three together at Loch Spynie, Moray & Nairn, on 2nd November, was unusual.

To date there have been no records of females, immatures or full-eclipse males in Britain, although this is hardly surprising given the absence of any fully tested identification criteria. Some identification characters have been tentatively suggested, relating mainly to possible face-pattern differences. Much work is still to be done, but detailed notes and photographs, especially any that refer to birds appar-

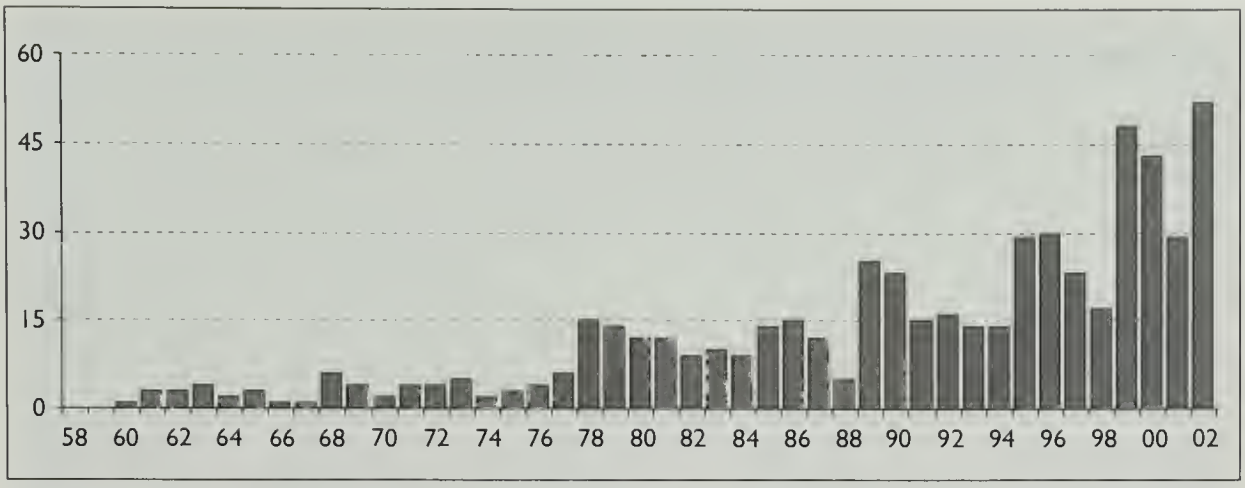


Fig. 4. Annual totals of presumed newly arrived Green-winged Teals *Anas carolinensis* in Britain, 1958-2002; like American Wigeon, this species has never been so prevalent in Britain.

ently paired to male Green-winged Teals, may prove to be of value in future if anything other than 'average differences' are uncovered.

Ring-necked Duck *Aythya collaris*

Number of individuals in 2002	Number of individuals in 1958-2002	Year rank	Highest annual maxima 1958-2002			Annual means 1958-2002				
			2001	2002	2000	1958-69	1970-79	1980-89	1990-99	2000-02
39	470	2	49	39	35	1	8	13	13	41

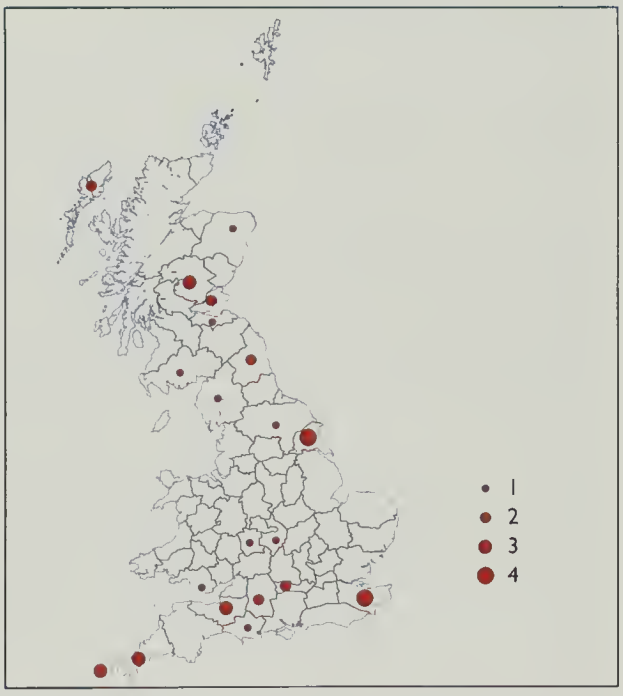


Fig. 5. The distribution of Ring-necked Ducks *Aythya collaris* in Britain in 2002, showing numbers of presumed newly arrived birds in each recording area.

Continuing the theme set by the previous two species, 2002 also proved to be yet another good year for Ring-necked Ducks in Britain, the estimated total of 39 newly arrived birds being the second-best ever. Indeed, the three best years on record for this species are 2000-02, an interesting similarity with Green-winged Teal, which has had its three best years since 1999. There have been suggestions that the 2002 total of Ring-necked Ducks may be artificially high, however, based upon a comparison of the number of first-winter and adult birds being identified. Assuming that immatures show a greater disposition towards transatlantic vagrancy, and are as capable as adults of surviving the crossing, then during a 'good year' the number of first-winters recorded should be significant and probably outnumber newly arrived adults. In 2002, only four birds were aged as first-years (compared with 11 and eight in 2000 and 2001 respectively), although the age of some was not clarified by observers. Three of these four were in the southwest, at Colliford Lake, Cornwall, on 26th October, and Porth, also Cornwall, on 17th-21st December, with the third on Scilly from 9th October to 5th November; the fourth individual was a first-winter drake in Hull, East Yorkshire, on 31st December. Furthermore, in 2002, only four individuals could be identified as having lingered from 2001, which may be an underestimate if birds are moving between sites. Given the potential complexities, the accurate ageing and sexing of birds is a key tool in monitoring arrival patterns.



George Reszeter

30. Female Ring-necked Duck *Aythya collaris*, St Mary's, Scilly, October 2002.

There was a wide geographical and temporal spread of Ring-necked Ducks in 2002, with birds being seen in 28 recording areas (including presumed wandering birds), and in every month of the year (fig. 5).

Surf Scoter *Melanitta perspicillata*

Number of individuals in 2002	Number of individuals in 1958-2002	Year rank	Highest annual maxima 1958-2002			Annual means 1958-2002				
			1999	1989	1997	1958-69	1970-79	1980-89	1990-99	2000-02
10	376	14	26	24	22	2	5	11	15	14

Approximately 22 Surf Scoters were reported in Britain during 2002, of which a maximum of ten and a minimum of six were considered newly arrived. The remainder had already been recorded at regular wintering sites during previous winters, especially around the Firth of Forth at Largo Bay, Fife (but occasionally roaming north to Lunan Bay, Angus & Dundee, and south to Musselburgh, Lothian), where up to four males and a female associated with Common *M. nigra* and Velvet Scoters *M. fusca* in 2002. Of the remainder, only three were aged with certainty as juvenile or first-winters: at Torbay, Devon, on 24th January; Loe Pool, Cornwall, from 23rd October to 8th November; and off Waxham and Sea Palling, Norfolk, on 14th-22nd December. Perhaps the most exciting and unusual record of the year was an adult male inland at Mere Sands Wood, Lancashire & North Merseyside, on 23rd October, the first record for the county since 1882. Other English counties to record Surf Scoter in 2002 were Scilly (a female/immature between St Martin's and Eastern Isles from 24th November to 30th December), East Sussex (Pett Level, 28th December into 2003) and East Yorkshire (with single males past Flamborough Head on 28th July and 6th September). In Scotland, away from the hot-spot of Fife/Lothian/Angus & Dundee, there were records from Moray & Nairn, Northeast Scotland, Orkney and the Western Isles.

Cory's Shearwater *Calonectris diomedea*

Number of individuals in 2002	Number of individuals in 1958-2002	Year rank	Highest annual maxima 1958-2002			Annual means 1958-2002				
			1998	1999	1980	1958-69	1970-79	1980-89	1990-99	2000-02
225	22,753	12	5,116	3,636	2,851	14	18	453	1,519	893

In total, 225 Cory's Shearwaters were seen in Britain in 2002, of which 205 were in the southwest, including 105 in Cornwall, 60 in Scilly, 37 in sea area Sole (mostly seen during 'Scilly pelagics'), but also singles between Ilfracombe and Lundy, Devon, on 28th August, and Portland Bill, Dorset, on 20th April. In the North Sea, 19 were reported, from Suffolk north to Girdleness, Northeast Scotland. Elsewhere, single birds were seen off Islay, Argyll, on 29th August and St Catherine's Point, Isle of Wight, on 14th May. Spring records are more unusual; the Dorset bird was the only record in April, and there were just two in May: off the Isle of Wight (above), and one in Carbis Bay, Cornwall, on 28th. The biggest movement occurred in the southwest, when 131 were seen on 28th July.

The majority of Cory's Shearwaters occurring in British waters are assumed to belong to the race *borealis* (breeding on the Atlantic Islands), although there are now a small number of reports of birds of the reasonably distinctive nominate Mediterranean race (colloquially known as 'Scopoli's Shearwater'). Pending clarification of the status of Mediterranean birds in British waters, nominate *diomedea* is assumed to be a national rarity and claims (preferably with photographic support) should be submitted to BBRC, who are investigating identification and assessment criteria for this taxon.

Night Heron *Nycticorax nycticorax*

Number of individuals in 2002	Number of individuals in 1958-2002	Year rank	Highest annual maxima 1958-2002			Annual means 1958-2002				
			1990	1987	1999	1958-69	1970-79	1980-89	1990-99	2000-02
13	436	8	61	53	26	3	6	13	18	9

This is the first appearance of Night Heron in this report; prior to 2002, the species was considered a national rarity and subject to assessment by BBRC. The 13 recorded in 2002 made it the eighth-best year for the species in Britain since 1958, when systematic recording began. Cornwall was the most popular county, with four records, while there were three in Lincolnshire, two on Scilly and singles in Cheshire, Herefordshire and Lancashire & North Merseyside. Although several were reported in Norfolk, only one was deemed likely to have been wild, at Titchwell on 20th-29th May. The presence in Norfolk of a free-flying population at Great Witchingham Park rather hampers the recording of the species in that county, and perhaps beyond. Other birds deemed to have been of non-wild origin were recorded in Cambridgeshire and North Yorkshire.

Of the genuine vagrants, the Cornish birds were among the earliest to appear, with the first at Tregeseal from 26th March to 1st April, and the remaining three before 21st April. The only other April bird was at Budworth Mere, Cheshire, on 19th. These were followed by three in May, one in June and two in August. Towards the end of the year, unseasonal birds appeared at Buslingthorpe, Lincolnshire, on 13th-16th November, and at Ribchester, Lancashire & North Merseyside, on 14th-18th December.

Purple Heron *Ardea purpurea*

Number of individuals in 2002	Number of individuals in 1958-2002	Year rank	Highest annual maxima 1958-2002			Annual means 1958-2002				
			1987	1999	1994/70	1958-69	1970-79	1980-89	1990-99	2000-02
12	745	29	35	32	28	7	19	21	20	18

In recent years, Purple Heron has become more difficult to find in Britain, and this trend continued in 2002, with only 12 accepted records. From a local perspective, the undoubted highlight for this species in 2002 was the first county record for Ayrshire. There was only one in autumn, as can be seen from

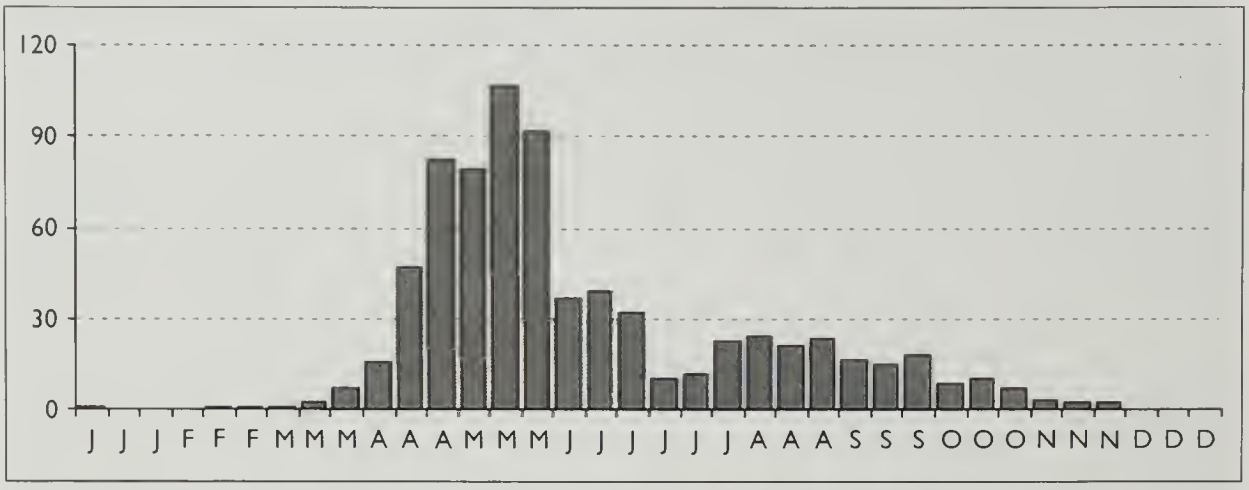


Fig. 6. Numbers of Purple Herons *Ardea purpurea* in Britain 1958-2002, showing the arrival times of migrants in ten-day periods. Late April and early May is, quite clearly, the time to be searching hardest for this southern overshoot on your patch.

the full list that follows: Kenfig Pool, Glamorgan, 9th April; Farlington Marshes, Hampshire, 14th-17th April; St Mary's, Scilly, 25th April; Penderry Hill, Ayrshire, 4th May; Slapton Ley, Devon, 5th-10th May; Hooe Level, Sussex, 12th May; Messingham, Lincolnshire, 20th-21st May; Holme, Norfolk, 22nd May; East Chevington, Northumberland, 25th May; Reedham Marsh, Norfolk, 18th June; Minsmere, Suffolk, 18th June to 4th August; and Bacton, Norfolk, 1st September.

Despite the low numbers recorded, the seasonal spread of records in 2002 conforms well to the overall pattern of occurrence of this species (see fig. 6). Most Purple Herons occur in spring as a result of northbound migrants overshooting or being displaced westwards in settled anticyclonic conditions. Numbers at this season therefore vary according to the suitability of the weather during the key migration period of late April and May and this, in turn, plays a major role in determining the annual number which arrive in Britain. Midsummer records are assumed to refer to wandering non-breeding individuals (perhaps mostly young birds, although this species does breed at one year of age, *BWP*), some of which make prolonged stays, like the Minsmere bird in 2002. Autumn records often involve juveniles, which are prone to randomly orientated dispersive movements prior to the onset of migration proper, which takes the large majority of European breeders south of the Sahara.

White Stork *Ciconia ciconia*

Number of individuals in 2002	Number of individuals in 1958-2002	Year rank	Highest annual maxima 1958-2002			Annual means 1958-2002				
			1998	2002	1986	1958-69	1970-79	1980-89	1990-99	2000-02
53	637	2	55	53	48	2	16	15	21	30

With the caveat that it is occasionally impossible to determine which birds have escaped from captivity or originate from the small semi-feral population, it appears that 2002 was an excellent year for White Storks in Britain, with 53 apparently wild individuals recorded. Some of these will undoubtedly have originated from the increasingly successful reintroduction programmes in The Netherlands, Belgium and northern Germany.

Spring migrants dominated, with 33 of the 53 birds appearing between March and early June. In the latter part of the year, only eight wild birds occurred from August onwards, with the last at Pett Level, East Sussex, on 8th November. The distribution of those assumed to be of wild origin in 2002 is shown in fig. 7.



Bill Baston

31. White Stork *Ciconia ciconia*, Cottenham, Cambridgeshire, June 2002.

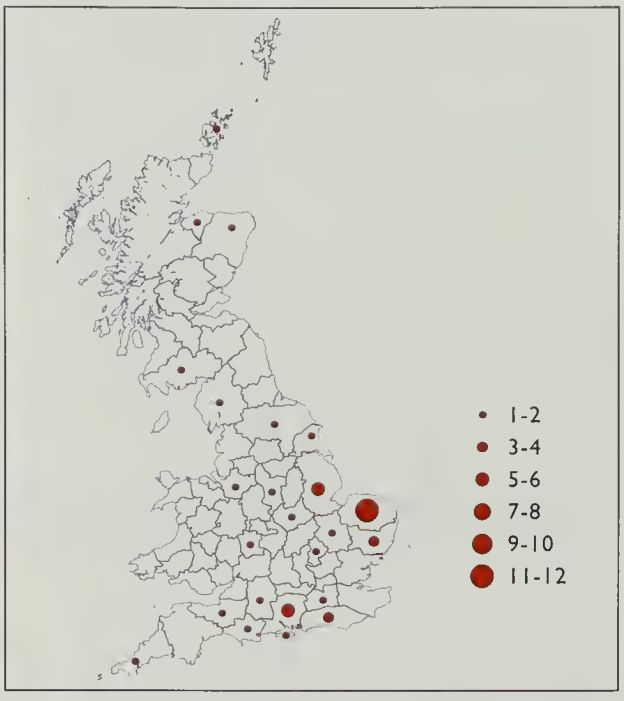


Fig. 7. Distribution of White Storks *Ciconia ciconia* in Britain in 2002. Only birds thought to be newly arrived (or at least previously unrecorded) and wild have been mapped. The relatively high numbers seen in counties along the east coast of England suggests that reintroduction schemes in the Low Countries and Germany may well account for a proportion of the 53 records shown here, a total which made 2002 the second-best year since 1958.

Honey-buzzard *Pernis apivorus*

Number of individuals in 2002	Number of individuals in 1986-2002	Year rank	Highest annual maxima 1986-2002			Annual means 1986-2002		
			2000	1999	2002	1986-89	1990-99	2000-02
185	4,001	3	2,170	203	185	60	124	839

Although not approaching the extraordinary numbers of 2000, the 185 Honey-buzzards in 2002 comprise the third-highest annual total since records were first collated for this species, in 1986. The spring of 2002 was, in fact, the best ever, with 71 birds (other than those at known or suspected breeding sites) being seen. Honey-buzzards were reported from 25 recording areas, chiefly in eastern and southern coastal counties south of the Humber, with most in Kent (13), Norfolk (7) and Hampshire (7). Three were reported in April, the first at Felixstowe, Suffolk, on 20th. After 13 in early May, birds appeared daily from 15th until 23rd May, with a peak of six on 16th, including three at St Margaret's, Kent.

Wandering birds were seen intermittently throughout June, July and into early August, but the first obvious autumn migrant was logged at Barton-on-Humber, Lincolnshire, on 13th August. Numbers peaked in the last ten days of that month, with 26 birds in all, and there were a further 22 in the first ten days of September. There was no overt migratory movement, most records being of single birds at widely scattered locations, although six were seen on 1st September. Five were reported in October, the last at Gunton, Suffolk, on 13th.

Although youngsters remain in Africa during their first-summer, some older immatures do return to Europe and these are likely to account for many records of midsummer birds away from, and even at, breeding sites. Where breeding does occur, it is quite usual for a number of non-breeding birds to attach themselves to the breeding territory, and a breeding pair is quite likely to have attracted a small number of 'hangers-on' by late summer.

Rough-legged Buzzard *Buteo lagopus*

Number of individuals in 2002	Number of individuals in 1974-2002	Year rank	Highest annual maxima 1974-2002			Annual means 1980-2002		
			1994	1998	1988	1980-89	1990-99	2000-02
31	1,156	12	255	110	85	28	73	28

With just 31 Rough-legged Buzzards recorded, 2002 became the third consecutive year of unremarkable numbers, although it was a marginally better year than the two preceding ones. When reviewing the reports, it has been assumed that all individuals were new arrivals (i.e. with no returning birds from previous winters). There were slightly more records in the second winter period (18) than the first (13). During the early part of the year, Norfolk was *the* place for seeing Rough-legged Buzzards, with no fewer than seven reported. In contrast, none was found in this county in the last few months of the year. The first arrival in autumn was at Whitton, Lincolnshire, on 13th October, with four more in that county, along with five in Suffolk, until the end of the year. Of the 18 recorded in autumn, 12 were first seen between 13th and 19th October.

Spotted Crake *Porzana porzana*

Number of individuals in 2002	Number of individuals in 1986-2002	Year rank	Highest annual maxima 1986-2002			Annual means 1986-2002		
			1995	1989	1988	1986-89	1990-99	2000-02
64	1,073	9	117	84	81	72	59	65

The 64 Spotted Crakes recorded in 2002 represent a fairly typical showing, and were spread across 24 recording areas, including Kent, where there were no fewer than 12 autumn records at Grove Ferry. Cornwall too fared well, with seven records, all of them at Marazion. Cheshire also recorded seven Spotted Crakes, including the first of the ten spring records, at Meols on 1st April. The remaining spring birds were on the east coast, from Suffolk to Shetland, with one more in April, at Wheatfen, Norfolk, on 16th-20th, followed by three in May and five in June.

The much heavier autumn passage peaked between 23rd August and 17th September, but records continued through late September and October, with the last two being at Parkgate, Cheshire, on 6th November and the Axe Estuary, Avon, on the notably late date of 8th December.

Common Crane *Grus grus*

Number of individuals in 2002	Number of individuals in 1958-2002	Year rank	Highest annual maxima 1958-2002			Annual means 1958-2002				
			1963	2002	1982	1958-69	1970-79	1980-89	1990-99	2000-02
243	2,332	2	685	243	199	64	19	56	38	147

The year 2002 produced the second-highest annual total of Common Cranes on record. The total of 243 was bettered only in 1963, when an unprecedented displacement of southbound birds occurred in late October, with many crossing the English Channel during thick fog (*Brit. Birds* 57: 502-507). More recently, there has been a trend towards the majority of sightings being reported in spring. Migrating Common Cranes are mobile and highly visible, so the perennial problem of duplicate counting is particularly relevant here. Nonetheless, we have used the same criteria to assess the numbers as in previous years: if there is any circumstantial evidence to suggest that two records relate to the same bird, then it has been assumed that they are the same.

The pattern of arrivals in 2002 conforms closely to the recent seasonal trend. Spring passage was record-breaking, with 161 birds reported (this compares with the previous highest spring total of 63 in 2000). Fig. 8 shows that the spring arrival peaked in mid March, coinciding with the passage of Scandinavian birds to their breeding grounds from southwest European wintering areas. During this period, no fewer than 50 were discovered during 15th-19th March, mostly in English east-coast counties but

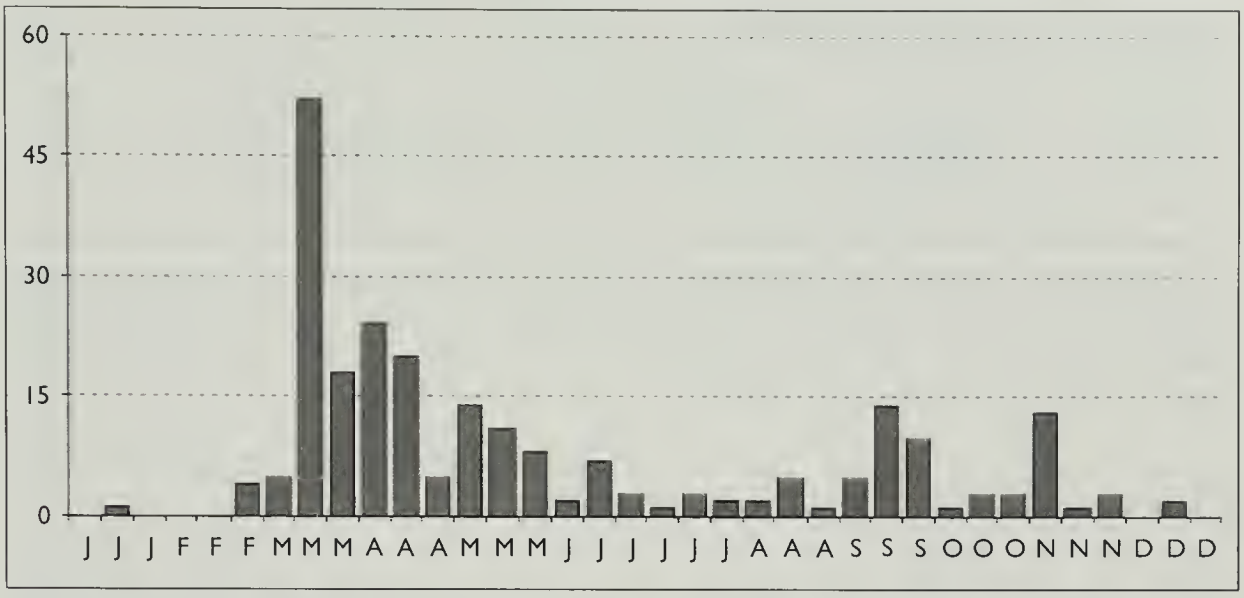


Fig. 8. Numbers of Common Cranes *Grus grus* in Britain in 2002, showing the arrival times of migrants in ten-day periods; 243 individuals made 2002 the second-best year for this species since 1958. The marked arrival in March is consistent with the recent trend, in which more Common Cranes have been seen in spring than autumn.

with several in eastern Scotland and, to the west, singles at West Sedge Moor, Somerset, and at Balivanich, Western Isles, on 16th. Passage continued throughout the spring, with a small secondary peak in early April, including 20 during 7th-11th April. In autumn, 63 cranes were reported, in turn making it the fourth-best autumn on record. Passage was protracted, with separate small peaks in mid September and the first ten days of November, and the last bird on the Isle of Man from 15th-18th December.

Overall, the geographical distribution showed the expected bias towards the east-coast counties, with the largest numbers occurring in Norfolk (36), Lincolnshire (29), Suffolk (28) and Shetland (13), although the three recording areas of Yorkshire mustered a total of 32 birds between them.

Number of individuals in 2002	Number of individuals in 1986-2002	Year rank	Highest annual maxima 1986-2002			Annual means 1986-2002		
			1993	1999/91	1996	1986-89	1990-99	2000-02
24	544	12	59	42	39	28	36	23

Kentish Plover *Charadrius alexandrinus*

It was another decidedly mediocre year for Kentish Plovers in 2002, the tally of 24 records matching the similarly low totals in both 2000 and 2001. Also unsurprising was the concentration of sightings in East Anglia and south-coast counties, with (appropriately enough) most in Kent (12) and three in each of Dorset, Norfolk and Sussex. In addition, there was a male at Ynys-las, Ceredigion, on 19th April; a female at Aberlady Bay, Lothian, on 10th-14th May (only the third for southeast Scotland since 1986); and one at the favourite site of Dawlish Warren, Devon, on 28th July.

Most were seen in spring, with four discovered between 16th and 19th April, and another six between 27th and 29th April, including four together at Pegwell Bay, Kent, on 27th. Four more were found on 10th and 11th May, but just five others were found after that in the spring (until mid June). The Dawlish Warren bird was the only July record, although there were two individuals in both August and September.

Diligent observations in Sussex established the origin of two ringed birds. The first of the year, at Pilsey Island, on 16th April, was an adult male which had been colour-ringed at Zuid-Holland, Netherlands, on 28th May 2001. The second bird, a juvenile at Goring-on-Sea on 9th-11th August, had been ringed at Zeeland, Netherlands, on 30th May 2002. Although successful breeding still occurs as close as The Netherlands and northern France, the evidence from these reports in the past few years suggests that Kentish Plover's imminent return as a breeding species is unlikely.

Temminck's Stint *Calidris temminckii*

Number of individuals in 2002	Number of individuals in 1968-2002	Year rank	Highest annual maxima 1968-2002			Annual means 1968-2002			
			1987	2001	2000	1968-79	1980-89	1990-99	2000-02
100	3,210	13	176	137	127	71	105	95	121

The overall total of 100 Temminck's Stints in Britain in 2002 constitutes a rather average year, but the two individual migration periods were quite different. Seventy-five were seen in spring (making it the seventh-best since 1968), but only 23 in autumn (the seventh-worst autumn total), together with a couple of wandering midsummer birds.

Of the spring records, there were two in April: at Orfordness, Suffolk, on 21st, and Saltholme, Cleveland, on 27th. After six in early May, the main arrival took place during the middle of that month when 51 were found during 10th-20th. One at Titchfield Haven, Hampshire, on 20th June, seems more likely to have been a dispersing bird, or failed breeder, rather than a spring or autumn migrant, as perhaps was one at Bowling Green Marsh, Devon, on 13th July. As for the previous species, records were concentrated in the southeast, including the top county tally of 20, in Norfolk, but there was also a good showing in Lancashire & North Merseyside, where eight were reported. Also of interest were reports of two at Musselburgh, Lothian, on 16th-17th and 22nd May, and at Stretton Sugwas, Herefordshire, on 17th May.

Autumn began well, with six at Cley, Norfolk, on 1st August, and four individuals arriving on 4th, part of the month total of 14. September accounted for the remaining nine, which included six in Kent, two at Goldcliff, Gwent, and the last of the year, a long-stayer at Chew Valley and Blagdon Lakes, Avon, between 22nd September and 10th November.

Pectoral Sandpiper *Calidris melanotos*

Number of individuals in 2002	Number of individuals in 1968-2002	Year rank	Highest annual maxima 1968-2002			Annual means 1968-2002			
			1999	1984	2000	1968-79	1980-89	1990-99	2000-02
75	1,986	7	132	131	91	40	70	57	80



Bill Baston

32. Juvenile Pectoral Sandpiper *Calidris melanotos*, Suffolk, September 2002.

The 75 Pectoral Sandpipers recorded in 2002 constitute an above average, but not exceptional, total for Britain. Only Norfolk, with ten, reached double figures, but records were spread widely, especially in the southern half of Britain. There were also a significant number of inland records, with perhaps one of the most unexpected being at Llan Bwch-llyn, Radnorshire, on 28th September.

Eight spring migrants were discovered, the first on 15th April (at Martin Mere, Lancashire & North Merseyside) and the last on 26th May (at Fisher's Mill Gravel-pit, Warwickshire); the other six were in Devon, Hampshire, Kent, Lancashire & North Merseyside, Norfolk and North Yorkshire. In the early part of the autumn, 11 turned up in July, including seven between 20th and 26th, with another 11 in August. The main bulk of the year's records were in September, with 37 spread fairly evenly through the month (though with 11 on 6th-10th and ten on 20th-24th). Eight appeared in October, the last of these at Loch of Strathbeg, Northeast Scotland, on 17th October.

Buff-breasted Sandpiper *Tryngites subruficollis*

Number of individuals in 2002	Number of individuals in 1958-2002	Year rank	Highest annual maxima 1958-2002			Annual means 1958-2002				
			1977	1975	1996	1958-69	1970-79	1980-89	1990-99	2000-02
6	620	32	54	48	34	3	21	19	15	17

Just six Buff-breasted Sandpipers were found in Britain in 2002, making this one of the worst years on record for this attractive wader. Since the early 1970s, when the trend towards double-figure annual totals became established (see *Brit. Birds* 95: 616), there have been fewer 'Buff-breasts' in only two years: 1972 (3) and 1987 (4). All six of the 2002 records appeared in autumn, the first at Kinshaldy, Fife, on 1st-2nd August. Typically, most appeared in September, the four records coming from: Fair Isle, Shetland, on 1st-2nd; Hirta, St Kilda, Western Isles, on 8th-9th; Gibraltar Point, Lincolnshire, on 13th; and Rother Valley Country Park, South Yorkshire, on 20th (what was believed to have been the same individual was seen at Wheldrake Ings, North Yorkshire, from 25th September to 5th October). Finally, Scilly had a long wait for Buff-breasted Sandpiper in 2002, with one at Periglis, St Agnes, on the unusually late date of 6th November. Although Scilly is a classic location for newly arrived American vagrants, the late arrival of this bird (some six weeks after the average peak occurrence time) might suggest that it had been elsewhere in northern Europe before turning up on Scilly.

Red-necked Phalarope *Phalaropus lobatus*

Number of individuals in 2002	Number of individuals in 1986-2002	Year rank	Highest annual maxima 1986-2002			Annual means 1986-2002		
			1999	1989	1992	1986-89	1990-99	2000-02
27	560	11	71	46	41	36	34	25

For yet another wader 2002 was not the best of years, being the third year in succession when fewer than 30 Red-necked Phalaropes were recorded in Britain. The few that were seen were widely scattered, with reports from 18 different recording areas, including four in Norfolk, three in both Essex and Shetland, and two in both East Yorkshire and Suffolk. For less predictable recording areas there were singles in Greater London (at William Girling Reservoir, on 16th September) and Buckinghamshire (College Lake, on 23rd May), with two in Wales, at Ynys-las, Ceredigion, on 11th June, and Goldcliff, Gwent, on 9th August. Discounting the small breeding population, there were just two in Scotland: on North Ronaldsay, Orkney, on 4th-11th July, and at Caerlaverock, Dumfries & Galloway, on 18th-20th July.

The first of the year appeared at Ferrybridge, Dorset, on 26th April, and this bird was a precursor of four in May, including three on 22nd-23rd, and six in June. After three in July, seven in August (including three on 30th-31st), and five in September (with three on 13th-16th), the last of a disappointing year was at Hanningfield Reservoir, Essex, on 18th-19th October.

Grey Phalarope *Phalaropus fulicarius*

Number of individuals in 2002	Number of individuals in 1986-2002	Year rank	Highest annual maxima 1986-2002			Annual means 1986-2002		
			2001	1989	1987	1986-89	1990-99	2000-02
159	4,246	10	1,122	366	365	282	167	481

The year 2002 was unremarkable for Grey Phalaropes in Britain, with 159 recorded. Of these, no fewer than 53 were in Cornwall, while North Yorkshire (13) was the only other recording area with more than ten. There were several inland records, including singles at Rutland Water, Leicestershire, from 28th January to 2nd February; the CEGB Reservoir, Cambridgeshire, on 14th February; Priory Country Park, Bedfordshire, on 14th October; Priorslee Flash, Shropshire, on 16th October; Rutland Water again on 20th-24th October; and Lower Bittell Reservoir, Worcestershire, on 21st-22nd October. Birds were found in every month of the year, but the majority (73) were seen in October, 45 of these between 19th and 29th.

Sabine's Gull *Larus sabini*

Number of individuals in 2002	Number of individuals in 1968-2002	Year rank	Highest annual maxima 1968-2002			Annual means 1968-2002			
			1987	1997	1988	1968-79	1980-89	1990-99	2000-02
108	4,511	12	710	396	346	51	203	141	155

Although the 108 Sabine's Gulls recorded in 2002 rank it as the twelfth-best year since 1968, this total falls a long way short of the 250+ of the top five years. Records were split between the east and west coasts, with 61 reported from North Sea coasts and 47 in the west. Of the former, 12 were in Scotland and 11 in East Yorkshire while, in the west, 14 were in Wales (plus another at sea), 11 in Cornwall, seven in Scotland and one on the Isle of Man.

Just five spring birds were seen, all passing watchpoints in the Western Isles between 28th and 30th May. Three midsummer birds appeared in early July, with two at Berry Head, Devon, on 2nd and one at Porthgwarra, Cornwall, on 4th. The first of the autumn was at Kirkcaldy, Fife, on 6th August, and was followed by a further 22 during that month. September and October each added 37; two late birds were seen at Point Lynas, Anglesey, on 6th November and 1st December, with another December bird reported off Peterhead, Northeast Scotland, also on 1st.



George Reszeter

33. Adult Sabine's Gull *Larus sabini*, off Scilly, October 2002.

Ring-billed Gull *Larus delawarensis*

Number of individuals in 2002	Number of individuals in 1973-2002	Year rank	Highest annual maxima 1973-2002			Annual means 1973-2002			
			1992	1990	1997	1973-79	1980-89	1990-99	2000-02
70	1,471	10	108	94	88	4	47	76	65

An estimated 70 of the Ring-billed Gulls reported in Britain in 2002 could not be readily linked to individuals remaining at, or returning to, sites used in previous years, of which there were ten. However, just 14 of the 70 (20%) were first-years, the only category guaranteed to be new arrivals. Given demographic patterns and the increased tendency of young birds to wander and appear as vagrants, this figure seems low. To some extent, the relative difficulty of identifying first-years might account for the low figure, but even so it has to be acknowledged that some, perhaps even many, of the 56 older individuals thought to be new arrivals might have crossed the Atlantic in previous years but occurred here initially only as passage migrants, itinerant winterers or not at all, perhaps having spent time elsewhere in Europe or Africa. Much the same might be said for several wildfowl.

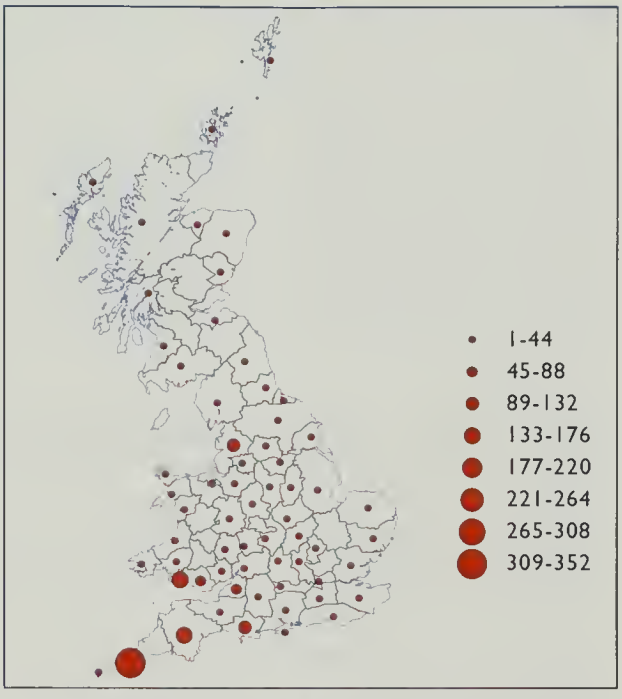


Fig. 9. Distribution of presumed newly arrived Ring-billed Gulls *Larus delawarensis* in Britain, 1973-2002, showing the expected concentration in the southwest.

The total of 14 first-years in 2002 matches exactly the number in both 2000 and 2001, which suggests that no major influx has occurred during these years. Over the same period, the total number of birds judged to be new has also remained consistent, so this measure (which to some extent must reflect prevalence – the *total* number of records in a year – rather than occurrence – the number of *new* individuals in a year) does at least independently confirm the lack of a substantive influx. The recording of prevalence does have some merits in cases where differentiating new arrivals from past visitors is difficult or impossible.

Interestingly, there is now evidence that some Ring-billed Gulls which reach Europe, perhaps after overshooting into Atlantic weather systems during migration or cold-weather movements, do in fact accomplish return crossings to North America, and that some might even establish a routine of transatlantic migration. A first-winter ringed in Bergen, Norway, in January 1990, was again seen in

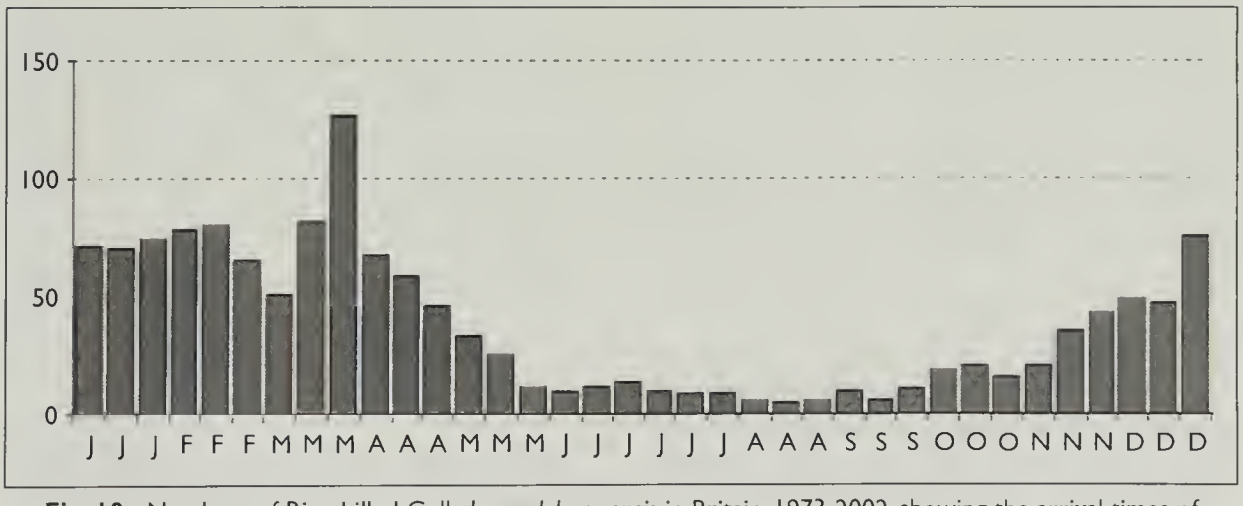


Fig. 10. Numbers of Ring-billed Gulls *Larus delawarensis* in Britain, 1973-2002, showing the arrival times of migrants in ten-day periods.

Bergen during winter 1990/91, before being controlled in St John's, Newfoundland, Canada, the following October; while a ringed adult that wintered in Bergen for seven years was shot in late April 1990 in Iceland, a date and location strongly indicative of a migration westward towards North America (see http://cyberbirding.uib.no/gull/rbg/ad_04.php). There have been no clear indications of this species showing breeding behaviour in Europe; even the summer attendance of birds at or near colonies containing other gull species is hardly known, and most summer records refer to non-breeding immatures, especially first-years. Furthermore, as fig. 10 shows, there is an obvious trend towards a spring peak. This seems just as suggestive of a passage movement as a cluster of new vagrants at this time, if not more so. Could it be that many of the Ring-billed Gulls occurring in spring are really just using Britain as a staging area before making a transatlantic crossing? If so, the continued bias towards records in the west (see fig. 9) might reflect a pre-departure gathering as much as the arrival of fresh vagrants from North America. It is a characteristic of gulls to show such opportunism in the face of unexpected events (like vagrancy) but it is also possible that some vagrant wildfowl, and even waders, make routine transatlantic crossings after finding Europe to their liking. After all, the North Atlantic does not pose a significant barrier to some common wader and wildfowl species, or even Northern Wheatears *Oenanthe oenanthe.*

Acknowledgments

The authors would like to thank most sincerely the county and regional recorders and their assistants for providing such detailed information for 2002 and for supplying additional records for past years where appropriate. Without their ready co-operation, this report would not have been possible.

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Identification review – Lesser Scaup

Colin Bradshaw

During the Easter holidays in 1987, I set off on a trip to southwest England that ultimately provided several birds which I had not seen in Britain before. En route, I stopped off in the Midlands to see the bird top of my list of those to see on the trip: a first-winter male Lesser Scaup *Aythya affinis* at Chasewater, Staffordshire, the first record for Britain (Holian & Fortey 1992). How times have changed! There have been numerous subsequent records of Lesser Scaup, with no fewer than 67 different individuals being accepted by BBRC up to the end of 2003 (Rogers *et al.* 2004). Some have remained for several weeks, or even months, enabling most keen birders to gain first-hand experience of this species, some doing so on an annual basis. All the early British records were of (relatively easily identified) males, but even then there was speculation that females must also be occurring yet were being overlooked. The first confirmed record of a female in Britain was fully nine years after the Chasewater bird, at Drift Reservoir, Cornwall, in November 1996 (Flumm 1996), but in recent years there have been multiple arrivals of both males and females. As birders gain increasing field experience of Lesser Scaup, in a variety of plumages, and study the plethora of published photographs, so the chances of finding and being the first to identify an individual of this species have also increased. There is, however, a world of difference between knowing the identity of a bird in a captioned photograph, or one seen on a twitch, and having the confidence to name your own 'find' with certainty before putting the news out. This short article emphasises the key points which establish the identification of Lesser Scaup, and is structured around a selection of photographs and sketches of birds seen in Britain over the past six years.

Identification

In general, male Lesser Scaup is most likely to be confused with male Greater Scaup *A. marila*, although the possibility of confusion with certain *Aythya* hybrids is a trap for the unwary. Females and young birds more closely resemble Tufted Ducks *A. fuligula* in corresponding plumages, although the issue of hybrids is even more difficult than with males. Nonetheless, although our ability to identify hybrid *Aythya* females remains in its infancy, progress is being made.

Bill shape and colour

Lesser Scaup has a bill structure intermediate between that of Tufted Duck and Greater Scaup. Although broader and deeper than on Tufted Duck, the bill is narrower than on Greater Scaup. The shape of the culmen of Lesser Scaup is distinctly concave, while that of Greater is straighter, and this is a useful verification feature when used alongside the other characters discussed below. Adult male Lesser Scaup shows less black at the tip of the bill than either Greater Scaup or Tufted Duck in corresponding plumages, this often being restricted to just a thin central stripe on the nail (plate 34); in Greater Scaup the entire nail is black, while in Tufted Duck the black expands onto the sides of the bill-tip, forming a small triangle. Unfortunately, bill-tip pattern is less useful as an identification character in young birds and females. Young birds in autumn show a lead-grey bill with the black usually restricted to the nail but, owing to the lack of contrast, this feature is difficult to see; in addition, some individuals show black extending laterally just beyond the nail. In females, the bill colour is often mid grey, rather than the pale blue-grey of males, but some females show a paler subterminal area which makes the pattern of the black nail more obvious.

Shape, size and jizz

It is important to appreciate that Lesser Scaup is no larger than Tufted Duck, and some individuals can even appear slightly smaller. Conversely, the overall size difference between Lesser and Greater Scaups is usually quite obvious; for



John Harriman

34. Male Lesser Scaup *Aythya affinis*, Redesmere, Cheshire, April 2001. In this classic image of a male, the black on the bill nail is clearly restricted to a narrow central stripe, and does not extend over the entire nail.



Iain Leach



Steve Young/Birdwatch

35 & 36. Male Lesser Scaup *Aythya affinis* (left, both photos) and male Greater Scaups *A. marila*, Drift Reservoir, Cornwall, March 2000. These photographs nicely compare several of the key differences between the two scaups, including the rather angular head with purple sheen, the heavily vermiculated mantle, the slightly cocked tail and smaller size of Lesser.

example, see plates 35 & 36, which show male Lesser and Greater Scaups side by side. These photographs also highlight the different head shape of the two scaups: the head of Lesser being roughly square-shaped and angular, with a high forehead and a small peak at the back of the crown, while that of Greater Scaup almost always appears distinctly large and bulbous, with a smooth curve extending from the fore-crown to the nape. Furthermore, the slightly concave culmen of Lesser Scaup tends to accentuate the angular appearance of the head. While the apparent head shape of Lesser Scaup may change according to posture and behaviour, sometimes becoming less peaked or angular, the bill invariably lacks the deeper-base and broader shape typical of Greater Scaup, with its straighter culmen. As with all *Aythya* ducks, the fact that head shape may vary means that it is important to assess this under a range of conditions, and from various angles, to be sure that it has been gauged accurately.

Plates 35 & 36 show that the body shape of Lesser Scaup is somewhat different from that of Greater Scaup or Tufted Duck, although the differences are subtle and difficult to describe! The highest point of the mantle of Lesser Scaup lies closer to the head than in the other two species, which produces a fairly angular cleft at the base of the neck where the nape and mantle meet, and a longer, more gradual taper from the

mantle peak to the tail (which also appears longer than that of either Greater Scaup or Tufted Duck). In Tufted Duck, the peak lies further back, so the outline profile from the base of the neck to the high point of the mantle and then to the tail is smoother and more symmetrical. In this respect, Greater Scaup is more similar to Lesser Scaup, but has a broader body and a less flattened back. Tail posture may be useful, although again this is variable: Lesser Scaup sometimes holds the tail slightly above the horizontal whereas Greater Scaup rarely raises its tail in this manner.

Wing pattern

The pattern of the upper-wing-bar of Lesser Scaup is crucial and can be used to distinguish both sexes from Greater Scaup, Tufted Duck and almost the entire spectrum of similar-looking hybrids in all plumages. The birds photographed wing-flapping in plates 37 & 38 illustrate this character perfectly and show that the white portion of the wing-bar is restricted to the secondaries, the bar becoming brownish on the primaries. Although the colour of the pale bar on the primaries may vary from brown to grey, there is almost always an obvious and clear-cut contrast between the white of the outer secondaries and the darker colour of the innermost primaries. Not all Lesser Scaups show such an obvious contrast as the two birds illustrated here, however, and Kaufmann (1990) estimated that up to 5% show the white secondary bar 'bleeding' onto the inner primaries to some degree (mostly in adult males). Almost invariably, patience is essential for the wing-bar pattern to be seen well, and it is difficult to judge accurately as the wings are flapped quickly. At some angles, poor or brief views can easily be misleading, so not only is it important to establish the extent of white in the wing-bar, but also to confirm this on more than one occasion, ideally with the spread wing more or less perpendicular to the observer.

Although this pattern was originally thought to be a diagnostic feature at all ages and in all plumages, a recent male hybrid *Aythya* in Buckinghamshire and Berkshire showed a wing-bar pattern typical of Lesser Scaup (Chris Heard pers. comm.), while other hybrids may show



Gary Bellingham



Iain Leach

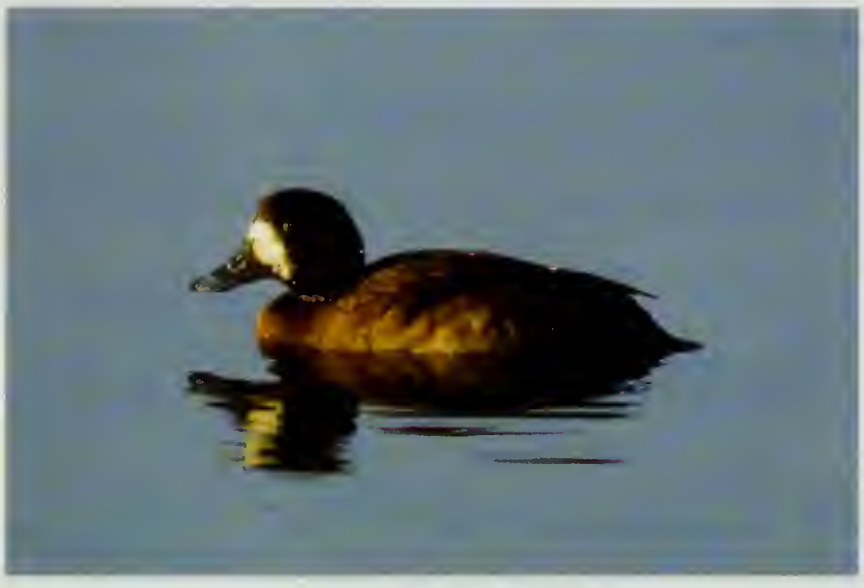
37 & 38. Male Lesser Scaup *Aythya affinis*, Drift Reservoir, Cornwall, March 2000 (37) and female Lesser Scaup, Cleethorpes Country Park, Lincolnshire, April 1999 (38). The level of contrast between the white bar across the secondaries and the duller bar across the primaries is a key feature of Lesser Scaup of both sexes. Greater Scaup *A. marila* and Tufted Duck *A. fuligula*, plus virtually all potentially confusing hybrid combinations, show either a white wing-bar that extends across both the secondaries and the primaries or a gradual change from white secondaries to grey primaries.

wing-bar contrast between the secondaries and primaries but not the clean-cut division of a typical Lesser Scaup. In these situations, other potential indicators of hybrid parentage must be checked carefully.

A recent addition to the armoury of those seeking to find their own Lesser Scaup relates to the pattern of the underwing (Garner 2002). This is a particularly useful feature when a suspected Lesser Scaup flaps its wings when facing you, something which they seem to do more often than when facing away! Female and immature Lesser Scaups show a white wing-lining, formed by white lesser and median underwing-coverts and axillaries, which contrasts with the grey feathering of the greater underwing-coverts, marginal underwing-coverts and the underside to the primaries and secondaries (Garner suggested that the underwing pattern of adult males is less distinct). The effect of this is to produce a contrasting pattern to the underwing, with the white 'lining' highlighted against a darker surround. Significantly, the pattern of the wing-bar is not visible across the underside of the primaries and secondaries. The underwing of both male and female Tufted Duck and Greater Scaup is typically fairly uniform off-white, lacking contrast between the underwing-coverts and the flight feathers; furthermore, the pattern of the wing-bar is usually visible as a diffuse image across the flight feathers. The underwing pattern must be used in association with the other characters discussed here, and is perhaps most easily studied on photographs, but it might well prove to be a valuable supporting feature when piecing together the evidence to identify a suspected Lesser Scaup.



Iain Leach



Steve Young/Birdwatch

39 & 40. Female Lesser Scaup *Aythya affinis*, Cleethorpes Country Park, Lincolnshire, April 1999 (39) and female Greater Scaup *A. marila*, Seaforth, Merseyside, November 1998 (40). Female Lesser Scaup is more difficult to identify than the male, and confusion is more likely to occur with female Tufted Duck *A. fuligula* than female Greater Scaup. This photograph of a female illustrates the angular head that peaks behind the eye, and appears darker and browner than the flanks and mantle, which have pale, greyish feather edges. Consequently, the paler body can contrast with the dark brown head, and this contrast is often visible at long distances. Although Lesser shares the broad band of white feathering around the bill base, below the bill this narrows significantly, and is usually thin or absent below the lower mandible, providing a reliable feature in separation from Greater Scaup, in which the white feathering forms a broad band encircling the entire bill.

Males

Most adult male Lesser Scaups complete the moult into breeding plumage by December or early January, while first-year males reach the same stage approximately one month later. Many first-year males retain some immature feathering, particularly on the rear flanks, as did the 1987 Chasewater bird. In plate 35, the play of light on the birds' heads clearly shows



John Wright

Fig. 1. Female Lesser Scaup *Aythya affinis* (left) and female Tufted Duck *A. fuligula*, Rutland Water, Leicestershire, April 2000.

the purple sheen of Lesser compared with the bottle green of Greater. Unfortunately, this is apparent in the field relatively rarely, with bright, sunlit conditions usually required to appreciate this iridescence. Furthermore, in less than perfect viewing conditions, Lesser Scaup sometimes appears to have a green gloss to the head, so care is required not to dismiss a potential Lesser Scaup too hastily. Of much greater use is the overall appearance of Lesser Scaup, which tends to be slightly darker than Greater. On Lesser, the coarse vermiculations of the mantle and scapulars render it quite dark above, and with the flanks being finely vermiculated, particularly the fore-flanks, the overall appearance tends to be marginally duller than Greater Scaup. Towards the rear, the contrast of the upperparts with the flanks increases, where the brown-washed rear scapulars merge with the unmarked brown tertials, and as the pattern in Greater Scaup is similar here, the contrast between mantle and flanks should be assessed near the mantle peak.

Although these features are readily apparent in good photographs, this is not always the case in the field, for example when viewing distant birds. Keith Vinicombe (pers. comm.) recalls a visit to see the male Lesser Scaup at Studland, Dorset, in April 2002. When he arrived and scanned the lake with binoculars he saw two distant scaups with apparently identical mantle coloration. He assumed both to be Greater Scaups until he checked them through his telescope, and was surprised to find that it was a Greater and a Lesser together. Later, when watching the two males diving at quite close range, it proved surprisingly difficult, and often impossible, to separate them during the brief periods when they surfaced, when both the head and body plumage were wet and sleeked down.

Females

Female Lesser Scaup poses a greater range of identification pitfalls than the male, and it is prudent to establish just what female Lesser Scaup really looks like before discussing its separation from similar species. Like the male, females are of similar size to, or slightly smaller than, female Tufted Duck, with an angular head shape that peaks behind the eye. The bill is similar in shape to that of the male, but is darker, and surrounded at the base by a broad blaze of white feathering. Confusion is more likely to occur with a Tufted Duck showing an unusually broad pale band of feathering around the base of the bill than with Greater Scaup. Female Greater Scaup should always be separable using a combination of size, head shape

and bill structure, but it does share with female Lesser the broad band of white feathering adjacent to the bill base. On Greater Scaup, this blaze of white feathering almost always seems to extend from the forehead to the chin, completely encircling the bill base. On Lesser Scaup, it is less extensive, extending from the forehead to the gape, but often not below it. When Lesser does show white below the gape this is usually separated from the white blaze above the upper mandible by an indentation of brown feathering (plate 39) and rarely reaches onto the chin.

The similarities in size, colour and head shape between Lesser Scaup and Tufted Duck demand a cautious approach if a suspected female Lesser Scaup, especially a first-year, is discovered. Some young female Tufted Ducks can show a similar head shape to that of Lesser Scaup, but the feathers forming the peak to the crown are frequently displaced if there is any wind, when it can be surprisingly easy to see that these feathers are slightly, but consistently, longer than the remainder of the crown feathers (in Lesser Scaup they are no longer than any other feathering on the crown). There are also minor differences in coloration of the head, mantle and flanks. In female Lesser Scaup, the flanks and mantle have pale, greyish feather edges and, consequently, the flanks can appear quite pale at a distance, while the mantle is also less dark than that of female Tufted Duck, so the body contrasts with the rich, dark brown head. Female Tufted Ducks tend to have darker feather fringes, particularly to the mantle, so that the body appears slightly darker than that of Lesser Scaup. In addition, the head of female Tufted Duck is less richly coloured than that of female Lesser Scaup and usually seems relatively cold. All this combines to produce relatively limited contrast between the head and the body of Tufted Duck; by comparison, the head of Lesser Scaup is contrastingly darker, enabling a distant bird to be picked out by its relatively pallid body, even when the detail of the white feathering surrounding the bill base is not visible. The field sketches by John Wright, of a female Lesser Scaup on Rutland Water, Leicestershire, in April 2000 (fig. 1), and plate 39, show these features well.

Hybrids

Hybrids present an additional dimension, potentially taking the identification challenge onto another level, and Randler (2001) published a detailed analysis of the problems that hybrids can present. In brief, two of the more frequent parental combinations which can produce hybrid offspring resembling male Lesser Scaup are Tufted Duck × Common Pochard *A. ferina* and Greater Scaup × Tufted Duck. A male Tufted Duck × Common Pochard hybrid has a purple tinge to the head and a peaked crown, but differences from male Lesser Scaup include the ground colour of the mantle



Arnoud B. van den Berg

41. Male Common Pochard *Aythya ferina* x Tufted Duck *A. fuligula* hybrid, Haarlem, Netherlands, February 2003. This individual is straightforward to separate from Lesser Scaup *A. affinis* on account of the broad black tip to the bill and the uniform greyish mantle.

(which tends to be more uniform grey, rather than white with dark vermiculations); a more extensive black tip to the bill which is not confined to the nail (see plate 41); and a white wing-bar which extends onto the primaries. Male hybrids from this parental combination are relatively easy to separate (Christoph Randler *in litt.*) but hybrid females can be remarkably similar to female Lesser Scaup, and wing-bar pattern may well be the best route to a correct identification. Greater Scaup × Tufted Duck hybrids can also be tricky but, although some will show a similar bill pattern and head shape to those of Lesser Scaup, they usually show a noticeably darker mantle (see plate 42) and an entirely white wing-bar. For example, one such hybrid, present at Chew Valley Lake, Avon, was described by John Martin (*in litt.*) as 'Quite similar to Lesser Scaup. The head shape was not bad and it had both green and purple gloss. The bill showed little black at the tip when viewed side-on but in good, head-on views, you could see that this was not confined to the nail, but extended laterally along the edge of the bill. The mantle and scapulars were too finely vermiculated [for Lesser Scaup] and, although the wing-bar appeared somewhat like that of Lesser Scaup, this was usually if it was seen briefly, at long range, or at an unfavourable angle.'



Thorsten Krüger

42. Male Greater Scaup *Aythya marila* x Tufted Duck *A. fuligula* hybrid, Wilhelmshaven, Germany, January 1997. Compared with the hybrid in plate 41, the dark tip to the bill is much more restricted, but mantle colour is too dark and closely vermiculated for male Lesser Scaup *A. affinis*. Note also the white flanks; those of Lesser Scaup tend to be finely vermiculated, particularly the fore-flanks, and thus somewhat duller.

Summary

Given reasonable views, Lesser Scaup can be identified using a combination of size, shape and plumage characteristics. However, although many observers have become increasingly familiar with Lesser Scaup in recent years, this species *can* still be difficult to identify. Hybrids, especially females, are really the main problem, and these look set to remain a source of confusion, for the time being at least. Even for those familiar with the appearance of a range of hybrids from possible parental combinations, care and attention to detail are essential. Ideally, records should include a discussion explaining how a hybrid individual was considered, reviewed and eliminated, as this would greatly assist BBRC in accepting the record. Precise details of the bill pattern, head shape and wing-bar would, however, remain a prerequisite for acceptance. As with any difficult species, finders of a potential Lesser Scaup are well advised to encourage other observers to see the bird and, if possible, obtain photographic evidence.

Acknowledgments

I would like to thank John Martin, Christoph Randler and Keith Vinicombe for their help in preparing this note; Gary Bellingham, Arnoud van den Berg, John Harriman, Thorsten Krüger, Iain Leach and Steve Young for providing photographs; John Wright for supplying fig. 1; and all the observers who have, in the main, submitted excellent descriptions with photographs of this difficult species to BBRC. Thanks must also go to John McLoughlin, Malcolm Ogilvie and Clive McKay for stimulating discussion surrounding the identification of the first-winter female Lesser Scaup on Islay in November 1998.

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Conservation research news

Compiled by Ken Smith and Lennox Campbell

The publication in 2004 of the results of the 'Seabird 2000' survey (Mitchell *et al.* 2004) has once again focused attention on the internationally important seabird populations breeding in Britain & Ireland. While many species, such as the auks, appear to be faring well, others, including Arctic Skua *Stercorarius parasiticus*, Herring Gull *Larus argentatus*, Kittiwake *Rissa tridactyla* and terns *Sterna*, have declined, prompting concerns that, for these species at least, all may not be well in the marine environment. It is timely, therefore, that a recent edition of the *Journal of Applied Ecology* contains two papers describing the results of intensive studies on two species with contrasting fortunes, the Kittiwake and the Great Skua *S. skua*, which throw further light on the complexities of the various factors affecting seabird populations. These papers are discussed below.

Mitchell, P. J., Newton, S. F., Ratcliffe, N., & Dunn, T. E. 2004. *Seabird Populations of Britain and Ireland*. Poyser, London.

The decline of North Sea Kittiwakes

In 2004, the widespread breeding failure of seabirds, including Kittiwakes, around the North Sea was headline news. Morten Frederiksen and his colleagues used long-term monitoring data from the Isle of May, Fife, to explore the factors responsible for recent trends shown by breeding Kittiwakes on the island.



Hugh Harrop

43. Adult Kittiwake *Rissa tridactyla*, Noup Head, Westray, Orkney, April 2002.

Since the 1980s, Mike Harris and Sarah Wanless have maintained an intensive annual monitoring programme of seabird breeding success and survival on the island. This paper demonstrates the immense value of this long-term data in exploring the factors responsible for population changes.

The Kittiwake population on the Isle of May increased from the 1970s, but since about 1990 there has been a marked downturn. Using data collected since 1986, Frederiksen *et al.* found that both breeding success and annual survival of Kittiwakes were negatively correlated with winter sea-surface temperature. Recruitment of Lesser Sandeels *Ammodytes marinus*, the main prey of the Kittiwakes, is reduced during warm winters, so higher winter sea temperatures are associated with low survival and low breeding success in the following year for these seabirds. In addition, it was apparent that the sandeel fishery on the Wee Bankie, off the Firth of Forth, had a clear effect on the Kittiwakes. In years when the fishery was open, both breeding success and survival were reduced, compared with years when the fishery was closed. Kittiwakes on the Isle of May are almost entirely

dependent on sandeels for themselves and their young, so to some extent they are competing with the fishery for the same resource.

To understand the implications of these effects, the authors built statistical models to predict the likely future ups and downs of the Kittiwake population. With the current high sea temperatures the birds may just be able to hold their own; but reopening the sandeel fishery, combined with any further increase in sea temperature, is predicted to lead to a catastrophic decline.

Frederiksen, M., Wanless, S., Harris, M. P., Rothery, P., & Wilson, L. J. 2004. The role of industrial fisheries and oceanographic change in the decline of the North Sea Black-legged Kittiwake. *J. Appl. Ecol.* 41: 1129-1139.

Great Skua predation on seabirds

Kittiwakes also feature in a study carried out at Hermaness, Shetland, where they are among the species most heavily affected by Great Skua predation. About 60% of the world population of Great Skuas breed in the UK, and they have increased here dramatically in the last 100 years, probably as a result of reduced persecution and increased amounts of fishery discards on which they feed. The adults and chicks of various seabird species also feature in the diet of the Great Skua and there has been increasing concern that the increase in numbers could be adding to the pressure on some of these prey species.

Steve Votier and his colleagues estimated the energetic requirements of skuas at this breeding colony by combining published data on key breeding and other parameters with data collected at Hermaness on aspects such as daily activity patterns, diet composition, meal size and energy content from pellets. They then used modelling techniques to work out how much of each prey type was consumed each breeding season by skuas at the colony. Although over 85% of the diet consisted of fish, birds were the next most important item, with almost 13,000 individuals, including an estimated 7,000+ adult auks (predominantly Puffins *Fratercula arctica*) and up to 2,000 auk chicks (only Common Guillemot *Uria aalge* and Razorbill *Alca torda*), taken in each of the two study years. Almost 30% of the seabirds consumed were taken by individual skuas which specialised on birds, although these made up only 5% of the breeding skua population.

Although the total number of Kittiwakes taken was small (300-400), this represented up to 20% of the total number of birds present at the colony (adults and chicks), supporting evidence from other studies which suggests that skua predation may cause at least localised extinctions. The authors also suggest that skua predation could be having an important effect on Puffins, of which only adults appear to be taken, and Fulmars *Fulmarus glacialis*, which have declined at several colonies in Shetland since the mid 1990s.

Using the models, it was possible to simulate the potential impact on the levels of predation of seabirds if the amount of fish in the diet was cut by 50%. This might be the degree of reduction expected if changes in fishing practice were implemented to reduce the quantity of discarded fish. This in turn suggested that an additional 6,500 birds per year would be taken by Great Skuas. More controversially, and assuming that vacant territories are not simply occupied by other seabird specialists, the models also showed that seabird losses might be reduced by up to 28% if specialist bird predators were removed. The authors point out, however, that further experimental study would be needed to assess whether removal of some birds is an effective and appropriate management strategy for reducing skua predation on other seabirds.

More generally, it is clear that, while measures to reduce the levels of fishing discards and enhance fish stocks may be essential for some declining seabirds, these could have unpredictable and negative effects on Great Skuas and seabirds breeding nearby. For example, a reduction in discards, unless balanced by greater availability of other fish food items, could lead to increased predation pressure by Great Skuas on other seabirds (e.g. Kittiwakes and Arctic Skuas) or to a decrease in the skua breeding population. Conservationists may have to acknowledge that, for some species at least, where population levels have been inflated as a result of human activities, we may ultimately have to accept that these populations will stabilise at lower levels.

Votier, S. C., Bearhop, S., Ratcliffe, N., Phillips, R. A., & Furness, R. W. 2004. Predation by Great Skuas at a large Shetland seabird colony. *J. Appl. Ecol.* 41: 1117-1128.

Notes

All Notes submitted to *British Birds* are subject to independent review, either by the Notes Panel or by the *BB* Editorial Board. Those considered appropriate for *BB* will be published either here or on our website (www.britishbirds.co.uk) subject to the availability of space.

Scavenging by Great Cormorants

In a recent Note, Cook & Cooper (2004) stated that, apart from some older references in *BWP*, 'there appear to be no other records of Great Cormorants taking prey other than fish'. It may thus be of interest to record that I quite often find stomachs of newly fledged Great Cormorants to contain large numbers of Brown Shrimps *Crangon crangon* (data as yet unpublished). Furthermore, adults have been found to take significant numbers of the large polychaete worm *Nereis virens* when it swarms at sea in spring, mainly in April (Leopold & Van Damme 2003). In April 2004 samples from the Vlieland cormorant colony (described in Leopold & Van Damme 2003), large numbers of *Nereis* jaws were again found in regurgitated pellets, confirming that this prey is a normal part of Great Cormorant diet in the eastern North Sea in spring.

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Components of an Osprey nest

In 1985, a pair of Ospreys *Pandion haliaetus* bred successfully on a remote section of the Red Sea coast near Dubā, in Saudi Arabia. The nest was located on a mound of rotting coral lapped by the sea. After the young had flown, the nest was examined and found to include the following items in its construction: odds and ends of timber flotsam, plastic baling strip, lengths of rope and cord, two pieces of lorry-type tyre tread, a plastic sandal, dried sponges, a variety of seashells, lumps of coral, two left-hand gloves, a small section of fishing net, a pair of gents' underpants (size 32-inch waist) and a complete goatskin, which was spread over the cup of the nest. But most remarkable of all the items found was a 1.6-m length of high tensile building rod, enmeshed in the structure of the nest. I suspect that the Osprey was the Red Sea subspecies *P. h. kleptomanius*!

Arthur Stagg

Presumed hybrid Syrian × Great Spotted Woodpecker in Poland

On 9th April 2004, in beech *Fagus* woodland between Krakow and Trzebinia, Poland, Felix Felger showed me a female *Dendrocopos* woodpecker which initially confused us. After Felix had suggested that it might be a hybrid between Syrian *D. syriacus* and Great Spotted Woodpecker *D. major*, however, its appearance and vocalisations made more sense, and this identification was subsequently confirmed from photographs (plate 44).

The bird was initially attracted to a recording of Great Spotted, and its own calls sounded more like those of that species than the softer, less sharp, calls typical of Syrian. The main differences from Great Spotted were an incomplete black post-auricular stripe which did not reach the nape; predominantly black outer rectrices with white markings restricted to the outermost feathers; and pinker undertail-coverts. The incomplete post-auricular stripe was the main difference from typical female Syrian (which lacks this stripe entirely), and the more reddish-pink undertail-coverts were also atypical of Syrian (though individual variation makes it difficult to draw safe conclusions from the colour of the undertail-coverts alone).

The bird was subsequently seen with a male Great Spotted, and appeared to be excavating a

nest hole in habitat more typical of Great Spotted than Syrian, the latter preferring more open habitats such as parks and gardens.

On the basis of its habitat, voice, and mixed plumage characters, it seems safe to conclude that this individual was a hybrid rather than a variant of either species. The occurrence of hybrids between these two closely related species has been documented previously (e.g. Bauer 1957, Andras 1960, Winkler 1971), and their appearance in relation to the identification of Syrian Woodpecker was discussed by Gorman (1999). This observation and others in central and eastern Europe show that hybrids between these two species occur not only on the edge of the range of Syrian, as traditionally believed, but also well behind this 'front line' (Gerard Gorman *in litt.*).



Andrew Harrop

44. Hybrid Syrian *Dendrocopos syriacus* x Great Spotted Woodpecker *D. major*, Poland, April 2004.

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Tail pattern of Reed Warblers

In their paper discussing the characteristics of Reed Warblers *Acrocephalus scirpaceus* of the eastern form *fuscus* (hereafter referred to simply as '*fuscus*'), Pearson *et al.* (2003) described a number of characters which, in combination, may enable the identification of individuals beyond their normal range. In the most comprehensive study of this taxon published to date, they concluded that only adults which have completed their winter moult and first-year birds in autumn (until November) are likely to be separable from nominate *scirpaceus* (hereafter referred to as '*scirpaceus*'), and, even then, provenance is likely to be uncertain.

It was suggested that one of a suite of plumage characters which may be useful to separate *scirpaceus* and *fuscus* is the presence of conspicuous pale, buff to off-white, tips to at least the three outermost pairs of tail feathers in *fuscus*. While we do not wish to cloud this issue further, recent close examination of *scirpaceus* in the hand has revealed the existence of extensive pale tips to the outermost rectrices of some individuals. At least four adults examined in southern Spain in



S. C. Votier



S. C. Votier

45 & 46. Adult Reed Warbler *Acrocephalus scirpaceus*, of nominate form *scirpaceus*, Spain, August 2003.



S. C. Votier

47 & 48. Adult Reed Warbler *Acrocephalus* s. *scirpaceus*, East Sussex, August 2001.



S. C. Votier

August 2003 and two in southern England in August 2001 showed a tail pattern similar to that depicted for adult *fuscus* in spring (fig. 2 in Pearson *et al.*). This typically comprised a prominent pale fringe to the inner web and a narrower fringe to the outer web (plate 45), the colour being described as 'off-white'. In all other respects these birds looked like typical adult *scirpaceus*, with rufous tones to the upperparts and lacking the pale fringe to the innermost primaries distinctive of *fuscus* (plate 46). Two further adult *scirpaceus* with pale tips to the outermost rectrices are shown in plates 47 & 48, both of which had no other features suggestive of the eastern form. Furthermore, among a large number of first-year *scirpaceus* trapped in southern England in August 2001, a small proportion showed even more extensive pale tips to the outermost rectrices than these adult birds (plate 49), despite appearing as typical *scirpaceus* in all other morphological characters.



R. Riddington

49. First-year Reed Warbler *Acrocephalus* s. *scirpaceus*, East Sussex, August 2001.

The tail pattern described does suggest a less extensive area of pale feather-tips than on some *fuscus*, but nonetheless there appears to be considerable overlap. In addition, the adults examined in autumn would be expected to show noticeably less pale pigmentation than after their complete pre-breeding moult at the end of the winter (by autumn, bleaching and abrasion will have reduced the extent of pale feather-tips, which are generally weaker than dark feather areas, and more susceptible to wear).

In summary, it seems that the presence of pale tips to the outermost tail feathers may not be exceptional in *scirpaceus*, particularly adults. The *lack* of pale tips might point strongly towards *scirpaceus* but, where a vagrant *fuscus* is suspected, careful attention should be paid to *all* the characters highlighted by Pearson *et al.*

Acknowledgments

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Reed Warblers reusing nests

The note on Reed Warblers *Acrocephalus scirpaceus* reusing nests (*Brit. Birds* 96: 303) prompts the following. While collecting data for the BTO Nest Record Scheme, I have spent time recording details of Reed Warbler nests at St Ives, Cambridgeshire. Over a period of seven years, I followed the history of 1,138 nests, of which 23 (2%) were recorded as being reused to some degree. The nature of the reuse varied, from no rebuilding or relining, to the building of a new nest on top of the old one. In the former category, two of the nests, both in the same small reedbed, were initially predated, and had eggs seven days later; as far as I could determine, there was no refurbishment of these nests.

In most cases, I have noted some degree of relining, and in many instances the rim of the nest had been rebuilt, as well as the nest being relined. On two occasions, the first when one egg failed to hatch (plate 50) and the second when a complete clutch failed, a nest was rebuilt on top of the old one; in both cases the old eggs were visible through the nest lining.

In 19 of the nests which were reused, the first brood had been successful and, as far as I could determine, the laying of the first egg of the second clutch occurred between 12 and 23 days after the young had left the nest. In nests where the first clutch failed, this interval was 5-9 days.

Plate 51 shows a second nest built above an earlier one, even though the first had tilted in the reeds *Phragmites* to an angle of almost 45°. In addition, I have noted in three instances a new nest being built up to 50 cm above an old one but using the same reed stems, and every year I have noted many cases where nests are built in close proximity to sites used the previous year (which I have confirmed in some cases by tagging the reed stems).



N. J. Westwood



N. J. Westwood

50 & 51. Nests of Reed Warblers *Acrocephalus scirpaceus* which have been in some way reused, St Ives, Cambridgeshire. In plate 50, a new nest was built directly on top of the original; in plate 51, the new nest used the same support stems, even though the original nest was tilted over almost at 45°.

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Apparent loss of pigmentation in an aged Reed Warbler

On 15th July 2000, at Rostherne Mere NNR, Cheshire, I mist-netted a Reed Warbler *Acrocephalus scirpaceus* which had unusual plumage features. The crown had a dappled appearance, with many white feathers admixed with those of typical olive-brown. The bird had normal body, wing and tail feathers, with the exception of the outermost greater-covert on each wing, which was white. This individual was extremely old, having been ringed on the reserve as a six-day-old pullus on 10th July 1991. It was caught again in July 1995 and May 1997, but on neither

occasion showed any signs of atypical plumage. Despite its age, the bird was in breeding condition, bearing a fully developed brood patch. This appears to have been a case of pigmentation loss in advanced age.

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Blue Tits feeding on a saltmarsh

Blue Tits *Parus caeruleus* are primarily arboreal, and I can find no mention of their occurrence in saltmarsh habitat (e.g. in *BWP* or Perrins 1979). Goodfellow (1964) recorded this and other passerine species feeding on the tidewrack, however, and thought they might be taking sandhoppers *Talitrus locusta*. British Blue Tits are considered to be largely resident, but continental birds wander more widely, especially in winters of food shortage (Perrins 1979). On 2nd January 1984, on the landward edge of the Warham saltmarsh, in north Norfolk, I encountered large numbers of Blue Tits feeding among dense Shrubby Sea-blite *Suaeda vera* and on the adjacent saltmarsh flat. There were two separate flocks, one of 120 accompanied by about 30 Yellowhammers *Emberiza citrinella*, and another of 110 Blue Tits and just a few Yellowhammers. The weather at the time was mild and overcast, with little wind. Dominant plant species on this saltmarsh include Common Sea-lavender *Limonium vulgare*, Thrift *Armeria maritima*, Sea Aster *Aster tripolium*, Common Saltmarsh-grass *Puccinellia maritima* and Sea Wormwood *Seriphidium maritimum* (on drier areas). It was not possible to ascertain what the birds were feeding on, but sandhoppers are found in the detritus beneath Shrubby Sea-blite (in large numbers following extremely high tides) yet not on the saltmarsh flats. The birds may have been taking mainly seeds. Given the time of year and the relatively high number of Blue Tits involved, I assumed that they had originated from continental Europe.

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Food plants of Linnet

The diet of the Linnet *Carduelis cannabina* includes the seeds of a wide variety of herbs and grasses, as listed in *BWP*. The following records concern plant genera not mentioned in this list. On 25th December 1951, at Aldenham Reservoir, Hertfordshire, a flock of 11 was seen feeding on the seeds of Hogweed *Heracleum sphondylium*. On 19th August 1968, at Red Wharf Bay, Anglesey, a party of eight was feeding on the fruits of both Sea Rush *Juncus maritimus* and Saltmarsh Rush *J. gerardii*. On 24th August 1994, at Wells-next-the-Sea, Norfolk, a flock of 44 was taking seeds from well-ripened pods of Garden Pea *Pisum sativum*. Finally, on 24th November 2002, about 3 km west of Burnham Market, Norfolk, a flock of 30 was feeding on the seeding heads of Sunflowers *Helianthus annuus*.

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Reviews

TIME TO FLY: EXPLORING BIRD MIGRATION

By Jim Flegg. BTO, Thetford, 2004. 184 pages; 107 colour photographs; 97 coloured maps; line-drawings and diagrams. ISBN 1-904870-08-2. Paperback, £14.00 (including p&p from the BTO).

This book provides a fascinating insight into bird migration to and from (and through and within) Britain & Ireland. The discussion follows 'our' migrants far beyond these shores to present a global picture. On the acknowledgments page, the book's concept is described as 'a readily-readable distillation of the key information from the inevitably complex wealth of data within *The Migration Atlas*' (review *Brit. Birds* 96: 209-210). This is an ambitious undertaking in a publication with 700 fewer (and smaller) pages than its counterpart.

The introduction reveals that the author's inspiration came while watching migrants on the clifftops of South Wales; he makes the point that bird movements take place throughout Britain & Ireland, and in all habitats. He adds that, without access to the data banks of the BTO, which runs our bird-ringing scheme, the book could not have been written.

The first three chapters cover the different types of migration; the ways in which birds are adapted, both anatomically and physiologically, for migrating; the reasons they do so and the hazards they may encounter; and the history and methods of studying migration. The following eight chapters, which comprise three-quarters of the book, concern the migrants themselves. These are dealt with under seven habitat headings (farmland; woodland; wetlands; estuaries; exposed coasts; towns and gardens; and mountain, moorland and heath); one chapter is devoted to a selection of rarities and vagrants. This arrangement works well, as it allows the advantages of each habitat-type to be discussed relative to the whole range of migrants it attracts. The final chapter explains, within the limits of current knowledge, how birds migrate successfully without maps, compasses, calendars, chronometers and weather forecasts.

The author uses ring recoveries (primarily), but also field observations and the results of other marking and tracking programmes, to describe, in a clear and informative manner, each species' migration in relation to date, place, habitat, weather and other influences. Many coloured maps illustrate and expand adjacent text, while numerous colour photographs add further appeal. Few readers will fail to learn something new about familiar species.

The book would be more user-friendly were its introduction headed as such and its chapters numbered, which is how they are referred to on the contents page and throughout the text. Furthermore, a lack of scientific names (other than to differentiate subspecies) and an index which lists whole bird-names alphabetically (thus grouping together, for example, the 'White's but not the 'Warbler's) will not be to everyone's taste.

These are mere quibbles, however, in the context of such an intelligibly written, attractively and instructively illustrated and interesting book. *Time to Fly* has indeed accomplished that conceptual aim.

Peter Lansdown

THE SECRET LIVES OF GARDEN BIRDS

By Dominic Couzens. Christopher Helm, A&C Black, London, 2004. 160 pages; many colour plates. ISBN 0-7136-6616-1. Paperback, £14.99.



Yes, yet another in the recent spate of garden bird books, but dismiss it and you will miss a treat. The jaunty cock Wren *Troglodytes troglodytes*, bestriding clothes pegs on a washing line, that graces the front cover, sets the tenor for this book: fun, fast-moving and fact-packed. The volume differs in format and emphasis of content from contemporary books on this increasingly popular subject. Foremost, it successfully follows the calendar year, revealing month by month the 'hidden secrets' of our more common garden birds. Many 'unusual' and 'surprising' forms of bird behaviour will be part- or well-known by established *BB* readers: for example, 'Battles on the feeder' (feeding hierarchies – January); 'Dance of the Dunnock' (mating strategies – February); 'A helping hand' (mutual help by nesting Long-tailed Tits *Aegithalos caudatus* – May); 'Complicated upbringing' (the parasitic Common Cuckoo *Cuculus canorous* – July); 'Red-breasted Hotheads (territorial violence among Robins *Erithacus rubecula* – September); and 'Sleeping together' (the benefits of communal roosting – November), though up-to-date detail will ensure fresh knowledge for all.

The author's lucid, engaging style of writing makes for ease of reading, enhancing greatly the book's appeal to anyone with a casual interest in garden birds, or bird behaviour, and highly likely to expand their hobby. The racy narrative and condensed, topic-based approach inevitably leads to some incomplete or misleading stories (for example, the overall role of a territory and the timing of Siskin *Carduelis spinus* spread into gardens), but there is a wealth of detail for the lay birdwatcher to assimilate comfortably. Peter Partington's eye-catching colour-wash paintings complement the narrative well, and include some striking portraits (for example, frosted Grey Heron *Ardea cinerea* beside pond, Wren feeding young Common Cuckoo, and Tawny Owl *Strix aluco* being mobbed by songbirds). The text is further enhanced by a range of top garden-bird photographs, among which those by Gordon Langsbury rate highly. Considering the large, attractive format, the wealth of illustrations and detail, this book is excellent value and deserves to be on the bookshelf of all with the interests of garden birds at heart.

David Glue

BIRD BRAIN OF BRITAIN: PIT YOUR WITS AGAINST THE EXPERTS!

By Charles Gallimore and Tim Appleton. Christopher Helm, A&C Black, London, 2004. 192 pages; line-illustrations. ISBN 0-713670-36-3. Paperback, £7.99.



As a recent victim of the ritual public humiliation that is 'Bird Brain of Britain' ('BBB'), my enthusiasm for the book was cool. BBB is the *Mastermind*-style quiz game held annually at the British Birdwatching Fair, at Rutland Water. It has been going since 1992, and this book is a compilation of the questions up to 2003.

In spite of my initial foreboding, the book is interesting and educational – easy enough to make you think you should know the answers, but hard enough to crush your spirit and send you scuttling back under the settee. The questions are arranged by years, specialist subjects and general knowledge separately. The answers are at the back. For each year, there is an introduction detailing the Birdfair's fundraising project, a list of that year's contestants, and who won. There is also a preface to explain the history of BBB, and of the Birdfair. And there is the obligatory foreword by Bill Oddie, who has chaired the competition in most years. Cartoons by John Cox are 'beautifully observed', i.e. not very funny, except that on page 99, which is brilliant!

Proceeds from the book go to the Birdfair fund for the conservation of birds and their habitats. So if you have any birding friends or family you don't like, this might be the ideal birthday present? Super book.

Martin Collinson

BWPI: BIRDS OF THE WESTERN PALEARCTIC INTERACTIVE DVD-ROM

BirdGuides. One DVD-ROM disk. Over 5,600 illustrations; songs and calls for over 600 species; 2,300 video clips give more than ten hours running time. ISBN 1-898110-39-5. £199.95.

The nine-volumes of *Birds of the Western Palearctic* (*BWP*), along with the two-volume Concise edition (*BWP Concise*) and the *BWP-Update* journals will be familiar to many *BB* readers. This DVD-ROM aims to combine the texts and plates of the books with a complementary interactive multimedia library of videos and soundfiles.

The full text of *BWP*, *BWP Concise* and Volumes 1 and 2 of the *Updates* are on the DVD, with the promise of *Updates* Volumes 3-5 in later versions. In addition, the editors have created separate 'Split Supplements' for recently split species by extracting information from the *BWP* 'lumped' texts. All the original figures, plates and maps (from *BWP Concise*) are included. In addition, there are over 2,000 video clips, at least one for most species, taken primarily from previously published *BirdGuides* material, and soundfiles of songs or calls for most species. Where appropriate, media clips for different subspecies are included and labelled.

The interface is not particularly intuitive, but is at least simple. The species list appears in a browser window, and can be arranged in 'Voous' order, according to families or, for the taxonomically challenged, alphabetically, in any of 14 languages. Click on a species and the options of viewing plates, texts (separately for the books and the updates), or any of the media appear in a separate 'assets' window. The user then clicks on what they want to see, and it appears in a third window, which can be arranged to display one feature at a time or several at once. Once you get the hang of it, finding what you want is relatively painless. It is possible to examine two species at a time, and to arrange the plates, etc. to make and save

your own library of comparisons between similar species.

A previous short-lived attempt at a multimedia version of *BWP*, the CD-ROM produced by Optimedia and Oxford University Press, was widely regarded as a disastrous piece of software. The *BWPi* website (http://www.birdguides.com/bwpi/) suggests that this version is completely different, but as one of the lucky owners who got the Optimedia/OUP version to work, I have to say that the general look and feel of this DVD set is very similar, although it lacks some of the features that were previously included.

The text is what makes *BWP*, and it seems to have survived on the DVD-ROM without the introduction of lots of typos. It is a great shame that more *Update* texts are not available. The 'Split Supplements' are a good idea, and the editors of *BWPi* have made a pretty good job of extracting the right information from *BWP* texts that, in my experience, do not always readily distinguish between subspecies. The style of these supplements, which include information from other sources, is more casual than the *BWP* texts, however, containing some information listed as '*contra BWP*'(!) and harbouring a number of minor errors.

The taxonomy incorporates many of the most recent changes adopted by the BOU. Some have been ignored (such as the new placement of Galloanserae), or forgotten (e.g. Great *Stercorarius skua* and South Polar Skuas *S. maccormicki* are still *Catharacta* here), but none of the recent species splits have been missed and all receive full separate treatment. Greenish Warbler *Phylloscopus trochiloides* and Two-barred Greenish Warbler *P. t. plumbeitarsus* are lumped, *contra BWP*, but following BOU. This lump is poorly handled, as it means that Two-barred Greenish Warbler is not fully covered in the texts. A 'Lump Supplement' would have been appropriate! Non-BOU splits included here (and not in the books) include the separation of Orphean Warbler *Sylvia hortensis* into Western Orphean Warbler (remaining as *Sylvia hortensis*) and Eastern Orphean Warbler *S. [h.] crassirostris*, and splitting of Balearic Warbler *S. [sarda] balearica* from Marmora's Warbler *S. sarda*. The media clips do not always cope with the taxonomy. For example, there is no sound-file for Balearic Warbler or Asian Desert Warbler *S. nana*, whereas differences in vocalisations are central to both these splits. There are other such omissions – these clips cannot be *that* hard to source!

Such points draw attention to the half-baked nature of the 'interactive' elements of this software. It is currently possible to add your own photos and clips to the species 'assets', but this is not particularly user-friendly or intuitive. Apparently, the software has been designed so that in future versions this will be simpler, and users will also be able to share their files via the web. This would enable birders to fill in the media clips that the *BirdGuides* library is lacking. Purchasers of this version had better hope that the online upgrades are cheap (or better still, provided free of charge to purchasers of version 1).

The 2,300 video clips are usually good, although highly compressed. All can be played full screen. Some of them qualitatively add to the usefulness of *BWP*, such as the flying seabirds, which give a better impression of jizz than any text can. Others are not so useful – what, for example, is the point of a clip of a downy Bulwer's Petrel *Bulweria bulwerii* chick in the hand? Some illustrate plumages that, in a Western Palearctic context, are irrelevant, for example spring adults of species such as Bobolink *Dolichonyx oryzivorus* that are only recorded in the region as first-winters. The date and location are frequently missing from the information about the clips, which lessens their usefulness. This last criticism can also be applied to the sound-files, but in general these, while not comprehensive, are undistorted and helpful. I would have preferred them to have been in a format that could be downloaded onto an MP3 player and taken into the field.

For the proof of the pudding, I decided to use *BWPi* as a reference for the work piled on my desk during the period of the review – projects on Iberian Chiffchaff *Phylloscopus ibericus*, Little Tern *Sterna albifrons*, and scoters *Melanitta*. Almost immediately, I found *BWPi* was not adequate, because it does not include any of the sonograms. This is a glaring omission that really hampers the DVD-ROM's credentials as a work of reference. I had to get the books out again.

If you do not have the books, then *BWPi* is an extremely cost- and time-effective way of accessing the information in *BWP*, and so much more. If you already own the books, and have a CD set of European bird songs, then there is rather less for you here. I very much like the idea of turning *BWP* into an interactive tool, but in its current format *BWPi* does not fulfil this aim.

Finally, I have had repeated problems with the software freezing on my creaky Windows ME machine while trying to access the media clips. I strongly recommend installing the whole software onto your hard drive (it takes about 7 Gb). This dispenses with the need to run it off the DVD, and I suspect would solve the problems I experienced.

Martin Collinson

THE HOUSE SPARROW

By Denis Summers-Smith. Collins New Naturalist Monograph, London, 1963. Facsimile of the original now accessible on CD. £15.00, available from the author at 79 Thames Avenue, Guisborough, Cleveland TS14 8AJ; e-mail: jdss@tribology.co.uk

Back in the winter of 1959/60, a young Tyneside birder went to a meeting of the local Natural History Society in Newcastle, where the speaker was one Denis Summers-Smith who gave a talk entitled 'The House Sparrow – a success story'. This talk (and one by John Coulson on Kittiwakes *Rissa tridactyla* in the same winter) made me realise that a career in professional zoology/ornithology was a goal worth pursuing. Thank you Denis and John – 45 years ago you lit a candle that is (happily) still burning!

Anyway, Denis's talk was based upon several years of study in Hampshire and Teesside, at a time when House Sparrow *Passer domesticus* was still an abundant urban and suburban species (how times have changed!). It was followed by a book, in the sadly now defunct New Naturalist 'Monograph' series, which brought together much of the then current wisdom about House Sparrows. Over the years, Denis followed this book with several others, still on sparrows, but the original (and to my mind always the best) has long been out of print. My own copy was bought (second-hand) for 18 shillings (90p in new money); signed by the author, it is still a treasured possession. Nowadays you won't get much change out of £100.00 if you want to buy that same book.

Aware of the importance of this book as a source of basic population data from the heyday of House Sparrows in the UK, Denis has collaborated with an IT colleague to produce a facsimile of his monograph on CD. This is a valuable resource, making the original available at a relatively modest price. The search facility is especially useful: much quicker than thumbing through the index. Unfortunately, the transfer has not been flawless, and I found several transcription errors. For example, in the reference list, Ernst Mayr is incorrectly given as Maye; Miese should be Meise; and Reg Moreau's initials are R. E. not R. B. Another small criticism is that, in the book, only an abbreviated citation list was given, for reasons of space; the full list was deposited at the Edward Grey Institute in Oxford. Assuming that this is still available, it would have been very useful had it been included on the CD. Sparrow buffs would have had easier access to the full set of citations, and the final product would have been considerably enhanced.

Despite these weaknesses, it is still a valuable exercise. The book is rightly regarded as a classic, and the modest purchase price of £15.00 (which is aimed to offset the costs of the project, not to make a profit either for Denis or for Collins) should bring it to the attention of a new generation of financially impoverished, but computer-literate researchers.

David Parkin

Postscript: In the time since David Parkin penned his review, Denis Summers-Smith and Roy Thersby have produced an amended version of the CD, which not only corrects the errors mentioned, but also includes the full citation list referred to above. So it is now even more of a bargain!
Eds

HOW TO BE A BAD BIRDWATCHER

By Simon Barnes. Short Books, London, 2004. 198 pages. ISBN 1-904095-95-X. Hardback, £9.99.

Rather than risk offending any of the splendid band of regular *BB* reviewers by implying that they might be (or might ever have been) a bad birdwatcher, I figured that I had better tackle this one myself. The subtitle 'to the greater glory of life', is perhaps a truer reflection of what this book is all about. Simon Barnes's definition of a 'bad birdwatcher' is one who notices and enjoys birds without (necessarily) taking their interest any further, save to recognise that such encounters enrich our daily toil.

Part autobiographical, for me this book was simply a good read (I read it more or less in a single sitting, on an otherwise tedious day when Brutish Airways [sic] were battling December fogs to get me to a *BB* meeting in London), with a strong message to those of us who are apt to get a wee bit too serious about birding. Which is that we are (or should be) in it to enjoy it – for too many of us there are elements of stress in birding and this book is a timely reminder to get things in perspective. Now, I don't mean to get all sanctimonious and judgemental here (I am as stressed as the next man when the mobile explodes with news of a Shetland tick), and neither does Barnes, but if we can appreciate and enjoy the commonplace as well as the unexpected, then so much the better.

As many sports fans already know, Barnes writes beautifully, on a par with the likes of (say) Cocker and Moss, who have produced more scholarly reviews of birdwatching recently. And there are some real gems in here. I was particularly taken by his explanation of jizz, and a fabulous mnemonic for Cetti's Warbler *Cettia cetti*, which I will resist from repeating as it contains a naughty word. So my advice is to buy this great little book, read it, and pass it on. The more bad birdwatchers there are the better.

Roger Riddington

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

The tsunami – and birds

Many of us will have been personally affected by the Indian Ocean tsunami, so it may seem insensitive to be concerned about the impact on wildlife when so many people died and so many more face an uncertain future. Accordingly, BirdLife (www.birdlife.net) delayed its first public assessment of the impact on the region's birds. On 6th January, BirdLife's Director, Dr Mike Rands, was relieved to confirm that no staff or volunteers appear to have been lost in the disaster even though 'the events have obviously caused enormous trauma, shock and damage to communities, property, habitats and some wildlife'. Although it is too soon to make detailed assessments of how the region's birds might be affected, a preliminary study from BirdLife scientists highlighted a number of species and important areas that might suffer. No fewer than 27 Globally Threatened birds occur regularly in those parts of Asia potentially affected by the tsunami, while the area also holds three Endemic Bird Areas.

Despite the wealth of biodiversity in the region, however, it is thought that few threatened species are likely to have been seriously affected by the direct effects of the tsunami, and no extinctions are predicted as a result. Surveys will be needed to confirm this, particularly in the Nicobar Islands, which have five endemics, including Nicobar Megapode *Megapodius nicobariensis*, which favours coastal forest. A further eight species are endemic to the Andaman Islands. It is likely that many coastal wetlands will have been affected by the huge inflow of salt water and wreckage during the tsunami, with longer-term effects on their hydrology owing to large-scale alteration of coastlines and damage to sea defences. Also in the longer term, the reconstruction process may have significant effects on biodiversity, particularly if communities of people are to be resettled in forested areas inland. BirdLife stresses the importance of assessing the environmental impact of new developments properly. 'The reconstruction process is likely to provide opportunities to integrate environmental protection and management with economic development in the region, including the opportunity to conserve and restore coastal habitats such as mangrove as coastal defences,' said Dr Rands.

Iraqi bird conservation work begins

BirdLife's Middle East Office in Jordan has organised and delivered a study tour of Jordan for eight Iraqi biologists. The group took part in workshops on Important Bird Areas (IBAs) and Site Support Groups (SSGs), and in turn were able to supply the findings of their own recent fieldwork in the Mesopotamian/southern Iraqi marshes. Using the techniques they had learnt, the group ranked the IBAs of the marshes in terms of how deserving each one is of bird conservation work in the near future, and concluded that Haur al Hammar (IBA 039) was the single highest priority.

In January, the group put theory into practice when they carried out wetland surveys of some of the major IBAs in Syria. On their return to Iraq this month, it is anticipated that the group will commence a six-month field survey of all the IBAs in southern Iraq. This survey is expected to form the beginnings of systematic conservation work for the protection and future management of the key biodiversity areas of Iraq. It will be led by the Iraq Nature Conservation Society in co-operation with the Iraq Foundation, a well-established national NGO. 'By a nice coincidence, on the last day of the Iraqi group's visit to Jordan, a satellite-tracked Lesser White-fronted Goose *Anser erythropus*, originally ringed in Siberia, turned up at an unsurveyed IBA east of Baghdad,' reported Sharif Al Jbour, BirdLife's Project Officer in the Middle East. 'This is a good example of how little we still know about Iraq's birdlife and what remains to be discovered. There is a very good chance that the survey team could find other rare and unexpected species, even the tantalising possibility of the Critically Endangered Slender-billed Curlew *Numenius tenuirostris*.'

Zino's Petrel population increases again

The population of Europe's rarest breeding bird, Zino's Petrel *Pterodroma madeira*, has received another boost. A new ledge with five active nests was discovered in 2004 (close to the one discovered in 2003 – see *Brit. Birds* 96: 529) in the central mountains of Madeira. No fewer than 11 new nests were found during the 2004 breeding season and, from a total of 53 active nests, 29 chicks fledged (a new record total). The population is now estimated to be between 65 and 80 breeding pairs – up from 45 pairs in 2003.

Dredgers threaten Dutch estuary

Dredging the Scheldt estuary in The Netherlands to allow larger ships to travel upriver, if allowed to proceed in the manner proposed, will inundate part or all of several large islands which are currently home to important breeding species, including Avocet *Recurvirostra avosetta*, Kentish Plover *Charadrius alexandrinus* and Mediterranean Gull *Larus melanocephalus*. The islands are also important high-tide roosts for wintering waders. Some years ago, planning permission for a container terminal just east of Vlissingen, on the north side of the estuary, was refused on the grounds that it would destroy an important site for fossils. Since then, commercial interests have lobbied hard for the dredging of the river, and representations by conservation bodies have been met with the reply that there is no money for birds – even though the allocation of resources is not the issue.

While there is no chance that the Scheldt estuary will be preserved in its present state, we can still hope that a compromise might yet be reached in which part of the threatened habitat is spared. The Low Countries are home to many birds that visit British shores as passage migrants or during hard weather, an added incentive for us to support Dutch and Belgian colleagues in their struggle to ensure that the responsible authorities, in reaching their decisions, do more than pay lip service to the importance of preserving wildlife habitats. Readers may address their concerns about future plans to the following body, which has been appointed by the Dutch Government to oversee the development of the estuary until the year 2030: Scheldt Estuary Development Project (*ProSes*), PO Box 299, NL – 4600 AG Bergen op Zoom, Holland; e-mail: info@proses.nl

(*Contributed by Jeremy Gaskell*)

'Diptheria' killing off world's rarest penguin

Yellow-eyed Penguins *Megadyptes antipodes* in New Zealand are suffering from a mysterious illness that has killed up to 80% of chicks in the worst-affected areas of the South Island. Most penguin chicks have been found dead at nests on Otago Peninsula and North Otago, with other outbreaks on Stewart Island and the Catlins coast. With a global population of just under 5,000, the Yellow-eyed Penguin is classified by BirdLife as Endangered, and is considered to be the world's rarest penguin. Its main threats are introduced predators such as cats *Felis catus* and Stoats *Mustela erminea*, habitat loss and degradation, and occasional population crashes (similar to this one) as a result of disease or food shortages. New Zealand's Department of Conservation is currently running tests to try to pinpoint the extent and nature of the illness, which is thought to be caused by a strain of *Corynebacterium*. There are more than 50 strains of this type of infection, one of which causes human diphtheria.

This latest setback is bad news for the Yellow-eyed Penguin, given that subpopulations on the southeast coast of the South Island and Stewart Island are already in decline. So far, it seems that only chicks are susceptible to the illness, with adults fortunately remaining healthy. Some accessible chicks on Otago Peninsula are being given antibiotics to help them to fight the infection. Large colonies of Little Penguins *Eudyptula minor* nearby do not appear to have been affected.

Bald Ibis reintroduction in Spain

The Andalusian regional government and the Jerez Zoo have released 21 Bald Ibises *Geronticus eremita* at Barbate, in Cádiz province, southern Spain. This follows the attempt to reintroduce the Bald Ibis to Austria (*Brit. Birds* 96: 529). By an extraordinary coincidence, a seemingly wild (unringed) Bald Ibis was discovered in late December at Piedrahita, in Ávila province, central Spain.

Malta under the microscope

The European Commission will be sending an inspection team to Malta in March amid claims that the island is the worst per capita abuser of hunting regulations in the EU. The Commission has been inundated by letters of complaint from Maltese residents, tourists, MEPs and NGOs, and it was high time for a detailed inspection of the hunting situation in Malta, Anne Teller, administrator on hunting issues at the Environment Directorate, told *The Times of Malta* (www.timesofmalta.com). The inspectors postponed their trip until March to coincide with a period notorious for illegal hunting. Ms Teller said that 95% of complaints sent to her directorate from Malta involve hunting. The Environment Directorate has asked the Maltese authorities for clarification about several instances of protected birds, including raptors, which were shot during 2004.

Donald Duck helps to save Dalmatian Pelican

The island nesting place of Europe's third-largest colony of Dalmatian Pelicans *Pelecanus crispus* has been saved. Ceaplace Island, on Romania's Lake Sinoe, in the Danube Delta Biosphere Reserve, was rapidly being eroded by waves and ice, losing three-quarters of its area in the last two years. Fewer than 1,500 pairs of Dalmatian Pelican now breed in Europe and the species' status has recently been upgraded to Vulnerable following declines across most of its range. A total of 84 pairs bred on the island in 2004, but a further 70-80 nests were swept away. Now, thanks to funding from the Disney Wildlife Conservation Fund, the RSPB and private donations, a wooden wall has been built which will enable the island to recover.

Irish split Herring Gulls

In December 2003, the Association of European Rarities Committees published a detailed and thorough 'progress report' dealing with virtually all of the major taxonomic questions being considered at that time. On the basis that four of the five European taxonomic committees recommend the splitting of 'Herring Gull' into six species (*Larus argentatus, L. smithsonianus, L. vega, L. cachinnans, L. michahellis* and *L. armenicus*), the Irish Rare Birds Committee has decided to adopt these splits insofar as they concern taxa recorded in Ireland. Consequently, Yellow-legged Gull *L. michahellis*, Caspian Gull *L. cachinnans* and American Herring Gull *L. smithsonianus* are now elevated to the rank of full species and added to Category A of the Irish List (www.birdwatchireland.ie/bwi/irbc/irbc_announcements3.html).

Hawaii Two-O

Another of Hawaii's native bird species has taken a step closer to extinction with the death in captivity of possibly the last Poo-uli *Melamprosops phaeosoma* left on the planet. The bird belongs to one of the world's most threatened bird families, the Hawaiian honeycreepers (Drepanididae), no fewer than 20 of which are extinct or Critically Endangered. The Poo-uli was first discovered in 1973, in Maui island's Ko'olau Forest Reserve, when its population was estimated at fewer than 200 individuals. In 1995, only 5-7 birds were known and by mid 1997 just three individuals could be found.

In common with many other native Hawaiian birds, it is thought that habitat loss and degradation (often by invasive feral pigs) and the rapid spread of introduced mosquitoes carrying diseases such as avian malaria (to which native birds have little resistance) have contributed to the species' decline. In 2002, one of the remaining individuals was caught and released within the territory of another, but the translocated bird did not remain in the area. Captive breeding efforts began in 2003, when members of the Maui Forest Bird Recovery Project attempted to locate and trap all remaining birds. One bird was finally captured on 9th September 2004, but sadly died on 28th November.

'Hawaii's bird extinction crisis is a global tragedy that is largely being ignored. That the world's wealthiest nation is allowing bird extinctions to continue, largely unchecked, in its own backyard is unconscionable,' said Dr George H. Fenwick, President of the American Bird Conservancy. The Poo-uli looks set to soon join the thirteen other extinct members of its family, while another endemic landbird, the Hawaiian Crow *Corvus hawaiiensis*, is now officially considered to be extinct in the wild, with a few birds clinging on in captivity.



Terry Newman

52. Red-billed Choughs *Pyrrhocorax pyrrhocorax* (two adults and four young), Lizard peninsula, Cornwall, June 2004. This photograph was sent in by Terry Newman, one of the band of mainly volunteer 'Chough Watchers' who take a share in manning daily 24-hour watches on the Lizard peninsula to keep tabs on England's only breeding pair of Red-billed Choughs. Ian Carter and his colleagues provided a summary of the species' return to Cornwall in 2001 (*Brit. Birds* 96: 23-29), and since that time choughs have bred successfully in 2002 (fledging three young), 2003 (three) and 2004 (four). The Chough Watchers, supported by RSPB employees, including Claire Mucklow, the Chough Project Co-ordinator, maintain an informal general watch in the area once the young have fledged and become independent of the adults. While walking the coastline between Mullion and Kynance on 28th June 2004, Terry reports that he was fortunate enough to encounter the whole family, and obtain some photographs. Sadly, they were seen only a few more times as a family of six, being reduced to five in July, the missing youngster possibly having been taken by a Peregrine Falcon *Falco peregrinus*. Nonetheless, it is thoroughly heartening to report steady progress of the Cornish colonisers.

Pittas dammed?

An important breeding site for one of Asia's most spectacular birds, the Fairy Pitta *Pitta nympha*, is under threat from a proposed new dam. Construction of the Hushan Dam will flood 422 ha of pristine forest, thought to hold one of the highest densities of breeding Fairy Pittas in the world. The Hushan Dam site is located in a geologically unstable and earthquake-prone area in Yunlin County, central Taiwan. Since a major earthquake in September 1999, the ground is thought to be even less stable than when the initial geological assessments were carried out. Environmentalists fear that the dam might be damaged if another earthquake were to occur – it could even collapse and cause flooding in nearby Douliu City.

The Fairy Pitta breeds in Taiwan before migrating to Borneo for the non-breeding season. During a survey in 2001, 173 individuals were found at the site, part of a global population that may number as few as 2,500. Consequently, Fairy Pitta is classifed by BirdLife as Vulnerable, and listed as an endangered species under Taiwan's Wildlife Protection Act. The endemic Swinhoe's Pheasant *Lophura swinhoii* also occurs in the area. The Wild Bird Federation Taiwan hopes that a better alternative to the dam can be found; for example, it would be safer and cheaper to extract groundwater from the Chingshiu River, which would also have less impact on the environment, and the future of the pitta.

Bobby Tulloch on the internet

Bobby Tulloch was the RSPB's first employee in Shetland, and will be known to many for discovering the nesting Snowy Owls *Bubo scandiacus* on Fetlar in 1967. Bobby Tulloch's photos of Shetland and its wildlife soon made him in great demand as a guest speaker and he was capable of filling venues such as the Royal Festival Hall on his lecture tours. Bobby died in 1996, but now an archive of 700 photographs bequeathed to the Old Haa Trust has been showcased on a website: www.bobbytulloch.com

A chance meeting with Eric Hosking, who had travelled to Shetland to photograph the owls, led to Bobby inheriting one of Eric's telephoto lenses; this, combined with his impressive fieldcraft, made Bobby a prodigious wildlife photographer. Not all his tactics were successful: on one occasion he and fellow Shetland birder Dennis Coutts approached the Fetlar Snowies disguised as a pantomime horse! The owls were singularly unimpressed.... Bobby Tulloch was also a skilled wordsmith, and memorably characterised the 'song' of European Storm-petrels *Hydrobates pelagicus* as 'the sound of fairies being sick'!

Pine Grosbeak on the phone!

Digiscoping? It's *so* last year. The new 'in thing' is *phonescoping*. Those ferociously keen birders, the Finns and the Dutch, are leading the way. Finnish birder Tommi Laurinsalo has a website showcasing the (suitably impressive) bird photos he's taken with a mobile phone attached to his telescope (http://koti.welho.com/tlaurins/phonescoping/). The recent influx of extremely confiding Pine Grosbeaks *Pinicola enucleator* to The Netherlands has provided Dutch birders with great phonescoping opportunities. An excellent feature about this latest development appears on the Surfbirds website (www.surfbirds.com/Features/phonescoping/phonescoping1204.html). [Your Editor can also report some developments along this theme in Shetland. Last autumn, before releasing a ringed White's Thrush *Zoothera dauma*, he took the opportunity to show the bird to a farmer on whose land the release occurred. The farmer, after admiring the big golden thrush, reached into the glovebox of his Land Rover, whipped out a dandy little Nokia phone, and photographed the bird ('just to show the missus')!]

Scottish Birdwatchers' Conference 2005

The Scottish Birdwatchers' Conference, organised jointly by SOC and BTO Scotland, will be held on Saturday 12th March at the Royal Botanic Gardens in Edinburgh. It's a one-day event entitled 'The Wings of Change', and promises to be an exciting look at how and why our bird populations are undergoing change. The diverse range of topics reflect the change theme, including the impact of predatory birds, the effect of windfarms, the disastrous 2004 season for Scottish seabirds and an update on the forthcoming *Birds of Scotland*. As well as talks there will be a range of stalls and a bird quiz running throughout the day. For a full programme and a booking form see the SOC website www.the-soc.org.uk, or write to Kate Walshaw, SOC, Harbour Point, Newhailes Road, Musselburgh EH21 6SJ.

Christmas competition result

Here are the answers to the two questions which have been tantalising readers in the N&c Christmas competition:

Which well-known British ornithologist was a comic-strip hero in the 1970s?

It was none other than Richard Porter, formerly the RSPB's Investigations Officer, and now a director of BB2000 Ltd, the company which publishes *BB*.

And in which publication did the strip appear?

The 1975 *YOC Bird Life Annual*, in a comic strip entitled 'Sunday March the 24th', in which our hero thwarts the efforts of egg-collectors targeting a Golden Eagle *Aquila chrysaetos* nest. Clearly this was too taxing – even Richard himself failed to identify the mystery person!

John Harrison Memorial Fund provides opportunities to visit Fair Isle

In 1968, the late Richard Richardson instigated a memorial fund in memory of his friend, John Harrison, who had visited Fair Isle three times before he died at the very early age of 19. The Fund provides financial assistance to young birdwatchers between the ages of 16 and 24 to enable them to visit Fair Isle and take part in the daily work schedule of the Bird Observatory. This opportunity has launched the careers of many budding ornithologists, and several have later become staff of the observatory.

Grants cover the cost of travel (by the cheapest means possible) from home to the observatory and back, with successful applicants required to pay just a small daily subsistence allowance. Awardees take part in the regular work routine conducted by the ornithological staff. Work varies according to the time of year, so you are advised to contact the warden if you have a particular interest such as ringing or migration work (note that no accommodation is available between 7th September and 7th October). Duties may involve several hours of data entry on computers per day, migration censusing, ringing, trap repairs, tree planting, visitor liaison, and occasional maintenance tasks.

If you are interested, or you know a young birder who might be, contact the warden for an application form at: Warden of Fair Isle Bird Observatory, Fair Isle, Shetland ZE2 9JU; e-mail: fairisle.birdobs@zetnet.co.uk; tel: 01595 760258.

Records of non-native birds in the UK

Since 1996, the Rare Breeding Birds Panel (RBBP) has monitored the establishment and spread of many non-native species breeding in the UK. Its annual report, published in *BB*, covers species in Category C (species that although introduced now derive from the resulting self-sustaining populations) or Category E (species that have been recorded as introductions, human-assisted transportees or escapees from captivity and whose breeding populations, if any, are thought not to be self-sustaining). Species on Category C form part of the official British List, those on Category E do not (unless they are species also in Categories A, B or C of the List).

It is clear that the data submitted on non-native species are far from comprehensive and that the overall picture of the status of many species is thus incomplete. There are several reasons for this. Some observers may be unaware of the need to record introduced species. Others may show a marked disinterest in submitting such records to County Recorders and that, in turn, makes it impossible for Recorders to provide RBBP with the information required.

The BOURC uses the RBBP's data to decide whether a species may be eligible for elevation from Category E to Category C and makes recommendations to the Joint Nature Conservation Committee accordingly. In this way, changes to our national avifauna can be tracked, status changes recorded, official lists updated and information gathered that helps us better understand the effects of humans on bird populations.

Consequently, we appeal to all observers to submit records of non-native species seen in the wild to their County Recorder. In this context, we would ask for records of *all* species on Category C (except Red-legged Partridge and Common Pheasant) and Category E, but not those with the joint categorisation AC (see BOU website for full British List). Please submit full details, including (where known) locality, date, numbers, age/sex and, especially, breeding activity/status. Only then will we be able to monitor the status of these species to the ultimate benefit of our native avifauna. For further details of the RBBP, contact the Secretary, Malcolm Ogilvie, tel. 01496 850218; e-mail: rbbp@indaal.demon.co.uk

Plain sailing for bustard reintroduction

The reintroduction of the Great Bustard *Otis tarda* to Salisbury Plain in Wiltshire is proving a success. In August 2004, 28 young bustards arrived at Heathrow Airport from Russia. Although disease claimed six of the birds, 22 were released in September. A further seven have been taken by Red Foxes *Vulpes vulpes*, leaving 15 of the original group extant. Dave Waters, who heads the Great Bustard Group, said: 'We always predicted losses. In the wild, the mortality rate for bustard chicks is 78% in their first year... [but] once they're through the first year, they stand a very good chance of being around in 10 or 12 years.' A further 40 chicks are scheduled to arrive from Russia in September 2005; the bustard group has a licence to import the birds annually for ten years. Free to come and go from their release enclosure, the birds now venture up to 10 km away, but all of the 15 return to base at night – except one, which left the enclosure the day it was released into the wild, and has since been dividing its time between a nearby pheasant shoot and a partridge shoot. Apparently the gamekeepers are happy to have it around and, with a 2-m wingspan, there is little likelihood of mistaking it for a pheasant or a partridge!

Still need PG Tips?

Fair Isle Bird Observatory requires two Assistant Wardens for the 2005 season (April-October). Applicants should have good bird identification skills, be physically fit, have a good head for heights, and preferably have some bird-ringing experience. Ranger and domestic positions are also available. For further details of the chance to work on this incredible island, contact Deryk Shaw, FIBO, Fair Isle, Shetland ZE2 9JU; e-mail: fairisle.birdobs@zetnet.co.uk tel. 01595 760258.

Recent reports

Compiled by Barry Nightingale and Anthony McGeehan

This summary of unchecked reports covers mid December 2004 to mid January 2005.

Bean Goose *Anser fabalis* Widespread influx of 'Tundra Bean Geese' *A. f. rossicus* during December, with largest flocks including 96 Methwold Fens, 80 Oxley Marshes, 55 Shingle Street and 47 North Warren (all Suffolk, perhaps with some duplication); 60 Fodder Fen (Cambridgeshire), 60 Walland Marsh (Kent), 30 Hickling Broad (Norfolk), 27 Hayling Island (Hampshire), 21 Greylake (Somerset) and 17 Whitemoor Haye (Staffordshire). Many other, smaller flocks, particularly in the southern and midland counties of England. American Wigeon *Anas americana* Loch Linnhe (Highland), 4th-11th January; Hayle Estuary (Cornwall), long-stayer to 10th January at least; Loch of Hillwell (Shetland), long-stayer to 9th January at least. Black Duck *Anas rubripes* Keele Lough (Co. Mayo), 3rd January; New Pitsligo (Northeast Scotland), long-stayer to 10th January; Scilly, two long-stayers, various islands, male to 29th December, female to 10th January at least. Redhead *Aythya americana* Kenfig Pool (Glamorgan), long-stayer to 26th December. Ferruginous Duck *Aythya nyroca* Carsington Water (Derbyshire), 2nd January; Trimley Marshes (Suffolk), 4th-5th January; Brooklees Lake (Staffordshire), 9th-11th January; Elstow (Bedfordshire), long-stayer to 12th January at least. Lesser Scaup *Aythya affinis* Abberton Reservoir (Essex), long-stayer to 9th January at least; Scotney Gravel-pits (Kent/East Sussex), long-stayer to 11th January at least. King Eider *Somateria spectabilis* Loch Ryan (Dumfries & Galloway), long-stayer to 3rd January; Titchwell (Norfolk), long-stayer until 1st January; Boddam/Peterhead area (Northeast Scotland), long-stayer to 10th January at least.

White-billed Diver *Gavia adamsii* Bluemull Sound (Shetland), 6th-7th January. Night Heron *Nycticorax nycticorax* St Margaret's-at-Cliffe (Kent), 20th December; Burton Mill (West Sussex), 29th December. Cattle Egret *Bubulcus ibis* Kingston Seymour (Somerset), 4th-11th January. Glossy Ibis *Plegadis falcinellus* Berney Marshes/Breydon Water (Norfolk), long-stayer to 11th January at least.

White-tailed Eagle *Haliaeetus albicilla* Massingham Heath, 26th December, presumed same Great Bircham area (both Norfolk), 9th-12th January. Gyr Falcon *Falco rusticolus* Loch Gruinart (Argyll), 20th December; North Uist (Western Isles), intermittently from 21st December to 7th January; Fair Isle (Shetland), 31st December to 3rd January.



Graham Catley

53. Rough-legged Buzzard *Buteo lagopus*, Kirkby, Lincolnshire, January 2005.

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Sora *Porzana carolina* Attenborough (Nottinghamshire), long-stayer to 1st January. American Coot *Fulica americana* Loch of Benston (Shetland), long-stayer to 9th January at least. Killdeer *Charadrius vociferus* North Uist (Western Isles), 25th December to 8th January. Short-billed Dowitcher *Limnodromus griseus* North Bull (Co. Dublin), long-stayer, still present in January. Lesser Yellowlegs *Tringa flavipes* Stiffkey Fen (Norfolk), long-stayer to 11th January at least. Wilson's Phalarope *Phalaropus tricolor* Seaton Carew (Cleveland), 9th January.

Laughing Gull *Larus atricilla* Carnoustie (Angus), 5th-8th January. Bonaparte's Gull *Larus philadelphia* Lewis (Western Isles), 10th January. 'American Herring Gull' *Larus argentatus smithsonianus* Dingle (Co. Kerry), 10th January; Nimmo's Pier (Co. Galway), long-stayer, present throughout period. Ross's Gull *Rhodostethia rosea* Nimmo's Pier, 6th January; Loch of Brow/Ringasta (Shetland), 8th-11th January. Ivory Gull *Pagophila eburnea* Kyle of Tongue (Highland), long-stayer to 9th January at least. Forster's Tern *Sterna forsteri* Strangford Narrows (Co. Down), 2nd January.

Blyth's Pipit *Anthus godlewskii* Land's End (Cornwall), long-stayer to 23rd December. Waxwing *Bombycilla garrulus* Some of the highest counts reported were 1,000 Aberdeen, 590 Renfrew (Clyde), 560 Edin-



Iain Leach



Rob Wardle

54 & 55. Sora *Porzana carolina*, Attenborough Gravel-pits, Nottinghamshire, December 2004.



Michael McKee

56. Killdeer *Charadrius vociferus* North Uist, Western Isles, December 2004.



Hugh Harrop

57. Adult Ross's Gull *Rhodostethia rosea*, Loch of Brow, Shetland, January 2005.



Hugh Harrop

58. Dark-breasted Barn Owl *Tyto alba guttatus*, Reawick, Shetland, December 2004.



Iain Leach

59. Dusky Warbler *Phylloscopus fuscatus*, Kessingland, Suffolk, December 2004.

burgh (Lothian), 520 Huddersfield (West Yorkshire), 500 Morpeth (Northumberland), 500 Newcastle-under-Lyme, 400 Rugely (both Staffordshire), 440 Glasgow (Strathclyde) and 350 Harrogate (North Yorkshire).

Pallas's Leaf Warbler *Phylloscopus proregulus* Kenidjack Valley (Cornwall), 31st December to 3rd January. Dusky Warbler *Phylloscopus fuscatus* Bawdsey (Suffolk), 15th-18th December; Kessingland (Suffolk), long-stayer to 12th January at least. Penduline Tit *Remiz pendulinus* Rainham Marshes (London), three, 29th December; Grove Ferry (Kent), 29th December. Arctic Redpoll *Carduelis hornemanni* Titchwell (Norfolk), long-stayer until 11th January at least.

All photographs of scarce and rare migrants are gratefully received for use in 'Recent reports', and all those published command a fee. Please send them to the editorial office (see front cover for details) or e-mail them to editor@britishbirds.co.uk (please ensure that images sent by e-mail are no more than 2Mb).

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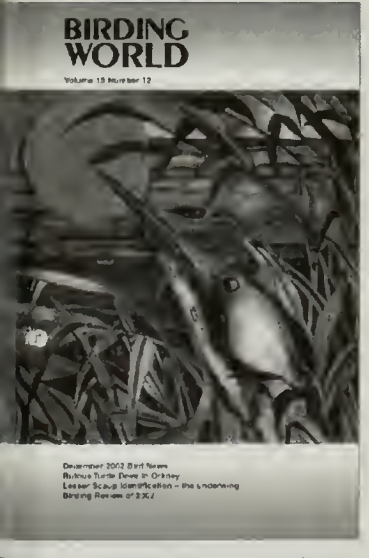
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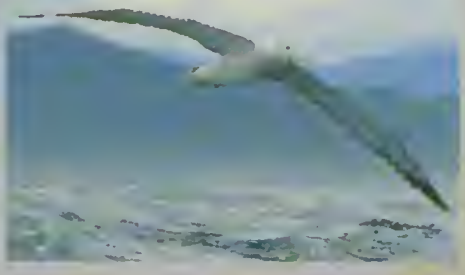
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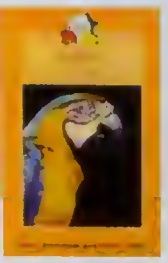
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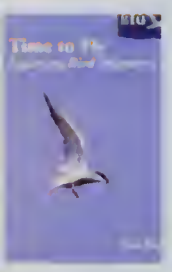
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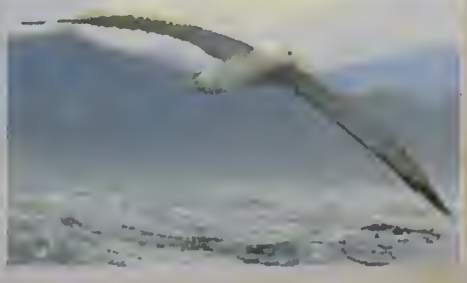
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Recent declines in populations of woodland birds in Britain:

a review of possible causes

Robert J. Fuller, David G. Noble, Ken W. Smith and Des Vanhinsbergh



Hawfinch *Coccothraustes coccothraustes* *Alan Harris*

ABSTRACT Large declines in the breeding populations and contractions of breeding range have occurred in several woodland birds in Britain in recent decades. Data from the BTO's Common Birds Census indicate that 10 out of 32 woodland species declined by more than 50% between 1966 and 1999, while 5 species increased by more than 50% over the same period. The declining species differ substantially in their ecology and life-history patterns. No single general explanation can be identified for the declines and it is likely that multiple factors have exerted a combined effect on several of the species. Seven factors emerge from this review as especially relevant and worthy of further study: (i) pressures on migrants during migration or in winter; (ii) climate change on the breeding grounds; (iii) general reduction in invertebrate food supplies; (iv) impacts of land use on woodland edges, habitats adjacent to woodland and hedgerows; (v) reduced management of lowland woodland; (vi) intensified habitat modification by deer; and (vii) increased predation pressure from Grey Squirrels *Sciurus carolinensis*, Great Spotted Woodpeckers *Dendrocopos major* and corvids.

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Bird populations in the wider countryside of Britain underwent large changes in the second part of the twentieth century. The majority of specialist farmland birds declined in the 1970s and 1980s, largely as a result of agricultural intensification (Chamberlain *et al.* 2000; Fuller 2000). It is less widely appreciated that populations of some woodland birds in Britain have also declined considerably in recent decades, with Lesser Spotted Woodpecker *Dendrocopos minor*, Marsh Tit *Parus palustris*, Willow Tit *P. montanus*, Tree Pipit *Anthus trivialis*, Wood Warbler *Phylloscopus sibilatrix*, Willow Warbler *P. trochilus* and Lesser Redpoll *Carduelis cabaret* added to the Red and Amber lists of Birds of Conservation Concern at the last review (Gregory *et al.* 2002).

These decreases in woodland bird populations cannot be explained in terms of an overarching transition in land management, as was the case for farmland birds. The declines have, in fact, occurred over a period when trends in forestry are likely to have been broadly beneficial to birds. The wooded area of Britain has increased, and forest policy has become more sympathetic to the need to consider woodland wildlife, in terms of both forest design and operational management. Many of the recent declines have taken place in woods that have undergone little obvious change in management approach, and where the overall physical structure and tree-species composition have changed little for decades.

This paper reviews a wide range of hypotheses and identifies several issues that seem especially important to address through further research. Initially, we summarise the extent of the declines, focusing on the 41 species that contribute to the Government's 'headline indicators' of woodland bird populations (Anon. 1999; Gregory *et al.* 2001). We then consider the factors that are potential drivers of changes in woodland bird populations under four main headings: (1) large-scale environmental change; (2) large-scale trends in land management and land use; (3) fine-scale trends in habitat quality; and (4) pressures from other organisms. A more complete discussion is available in Vanhinsbergh *et al.* (2003).

A broad definition of 'woodland' is adopted here, which we take to include any area of land where trees or large bushes are the dominant vegetation. Consequently, some of the bird species considered are characteristic breeding birds of scrub or young plantations, e.g. Lesser Whitethroat *Sylvia curruca* and Lesser Redpoll.

Changes in populations and distributions of woodland birds

Methods

Bird population data for the period 1966-2000 were obtained from woodland plots surveyed by the BTO's Common Birds Census (CBC) (Marchant *et al.* 1990). These years cover the entire woodland CBC dataset, since the scheme has now been replaced by the BTO/JNCC/RSPB Breeding Bird Survey (BBS), which does not currently generate trends specific to woodland. Although trends from BBS are not reported here, this survey provides additional short-term information for the period 1994-2002, and includes several species that were not adequately monitored by the CBC (Crick *et al.* 2004). The number of CBC plots varied



George Reszeter

60. Spotted Flycatchers *Muscicapa striata* declined by 85% between 1966 and 1999 on Common Birds Census woodland plots, the most severe decline of any of the species considered here (see table 1, p. 119). First-year survival has decreased, and this suggests that factors operating during the post-fledging period (perhaps a reduction in invertebrate availability) or on the species' migration routes or wintering grounds may be responsible.



Rob Fuller

61. Ride through oak *Quercus* woodland, Buckinghamshire, April 2004. As a result of changing markets for timber and wood, large areas of broadleaved woodland are managed less intensively now than was the case several decades ago. This has resulted in increased shading, a reduced understorey and fewer open spaces within many woods. The creation of glades and widening of rides may help to offset the effects of reduced management, especially where shrubby and brambly margins are allowed to develop, as shown here.

between years and ranged between 75 and 120. Data were analysed using Generalised Additive Models (Fewster *et al.* 2000) to calculate an annual smoothed population index for each species, for the period 1966-2000. Smoothed indices were used as they identify underlying trends and remove extreme estimates of change caused by short-term fluctuations in population levels. The percentage population change between 1966 and 1999 was then calculated for each species as:

$((index_{1966} - index_{1999}) / (index_{1966})) \times 100$.

Although all available data were used in the models, the change in population status was calculated to the penultimate year of data (1999 rather than 2000), to minimise unreliable last-year effects of the smoothing process in the models. Following standard convention, we have treated a species as declining if it showed at least a 25% decrease between 1966 and 1999.

CBC woodland plots are concentrated in south and central England and Wales. In general, they do not include conifer plantations, which is particularly relevant for Lesser Redpoll, Tree Pipit, Goldcrest *Regulus regulus* and Coal Tit *Parus ater*. Long-term population trends of these species in conifer plantations are unknown.

The British distribution of each species in 1968-72 was compared with that in 1988-91 using presence–absence data from the two national breeding-bird atlases (Sharrock 1976; Gibbons *et al.* 1993). Low reporting rates on CBC plots meant that population indices were not calculated for nine woodland indicator species, so information on their status was gleaned from other sources.

Estimates of change

The CBC trends suggest that 12 out of 32 woodland species have declined by more than 25%, and that 10 of these 12 have declined by >50% (table 1). The declining species were Spotted Flycatcher *Muscicapa striata* (-85%), Lesser Spotted Woodpecker (-81%), Lesser Whitethroat (-79%), Lesser Redpoll (-78%),

Table 1. Estimated change in population and distribution of woodland birds based on Common Birds Census woodland plots (1966-2000) and the two breeding-bird atlases (1968-72 and 1988-91). Species are listed in order of estimated population change.

	Estimated percentage change in abundance (1966-99)[1]	Reliability of CBC trend[2]	No. 10-km squares occupied in 1968-72 atlas	No. 10-km squares occupied in 1988-91 atlas	Change in no. 10-km squares occupied (%)
Spotted Flycatcher *Muscicapa striata*	-85	1	2435	2378	-2.3
Lesser Spotted Woodpecker *Dendrocopos minor*	-81	1	889	790	-11.1
Lesser Whitethroat *Sylvia curruca*	-79	1	1094	1271	16.2
Lesser Redpoll *Carduelis cabaret*	-78	2	1979	1754	-11.4
Tree Pipit *Anthus trivialis*	-75	2	1793	1524	-15.0
Willow Tit *Parus montanus*	-74	1	1220	1100	-9.8
Marsh Tit *Parus palustris*	-68	1	1366	1133	-17.1
Woodcock *Scolopax rusticola*	-61	2	1693	1204	-28.9
Dunnock *Prunella modularis*	-58	1	2601	2511	-3.5
Willow Warbler *Phylloscopus trochilus*	-53	1	2590	2602	0.5
Song Thrush *Turdus philomelos*	-48	1	2680	2620	-2.2
Bullfinch *Pyrrhula pyrrhula*	-38	1	2326	2173	-6.6
Eurasian Jay *Garrulus glandarius*	-21	1	1744	1713	-1.8
Common Chiffchaff *Phylloscopus collybita*	-20	1	2003	2100	4.8
Common Redstart *Phoenicurus phoenicurus*	-18	2	1661	1327	-20.1
Garden Warbler *Sylvia borin*	-17	1	1833	1867	1.9
Blackbird *Turdus merula*	-8	1	2722	2664	-2.1
Common Chaffinch *Fringilla coelebs*	-4	1	2588	2602	0.5
Long-tailed Tit *Aegithalos caudatus*	1	1	2194	2106	-4.0
Eurasian Treecreeper *Certhia familiaris*	13	1	2289	2120	-7.4
Goldcrest *Regulus regulus*	15	2	2343	2327	-0.7
Blue Tit *Parus caeruleus*	16	1	2518	2480	-1.5
Coal Tit *Parus ater*	24	2	2392	2315	-3.2
Great Tit *Parus major*	30	1	2457	2443	-0.6
Tawny Owl *Strix aluco*	40	1	2305	2054	-10.9
Robin *Erithacus rubecula*	41	1	2609	2629	0.8
Great Spotted Woodpecker *Dendrocopos major*	47	1	2050	1959	-4.4
Wren *Troglodytes troglodytes*	51	1	2757	2747	-0.4
Blackcap *Sylvia atricapilla*	55	1	1923	2048	6.5
Eurasian Sparrowhawk *Accipiter nisus*	83	1	1823	2178	19.5
Green Woodpecker *Picus viridis*	97	1	1623	1555	-4.2
Eurasian Nuthatch *Sitta europaea*	122	1	1174	1270	8.2
Crested Tit *Parus cristatus*	NA	NA	46	51	10.9
Wood Warbler *Phylloscopus sibilatrix*	NA	NA	1230	1270	3.3
Pied Flycatcher *Ficedula hypoleuca*	NA	NA	546	732	34.1
Firecrest *Regulus ignicapilla*	NA	NA	20	99	395
Siskin *Carduelis spinus*	NA	NA	625	1158	85.3
Long-eared Owl *Asio otus*	NA	NA	590	445	-24.6
Common Nightingale *Luscinia megarhynchos*	NA	NA	639	457	-28.5
Hawfinch *Coccothraustes coccothraustes*	NA	NA	459	315	-31.4
Capercaillie *Tetrao urogallus*	NA	NA	182	66	-63.7

[1] Based on smoothed population indices to the penultimate year (1999) derived using GAMS (see Methods).
[2] Assessed on the basis of sample size and whether the populations in the sites surveyed represent the UK population, based on Crick *et al.* 2004: 1 = data are reliable and mean number of plots surveyed each year in which the species was ever recorded exceeded 20; 2 = trend based on regions, habitats or sampling protocols that may not represent the bulk of the population.

Tree Pipit (-75%), Willow Tit (-74%), Marsh Tit (-68%), Woodcock *Scolopax rusticola* (-61%), Dunnock *Prunella modularis* (-58%), Willow Warbler (-53%), Song Thrush *Turdus philomelos* (-48%) and Bullfinch *Pyrrhula pyrrhula* (-38%). Five species increased by more than 50%: Eurasian Nuthatch *Sitta europaea*, Green Woodpecker *Picus viridis*, Eurasian Sparrowhawk *Accipiter nisus*, Blackcap *Sylvia atricapilla* and Wren *Troglodytes troglodytes*. Four species increased by 25-50%: Great Spotted Woodpecker *Dendrocopos major*, Robin *Erithacus rubecula*, Tawny Owl *Strix aluco* and Great Tit *Parus major*. There was a significant positive correlation (Pearson r = 0.49, P<0.01) between the percentage change in range between the two breeding-bird atlases and the CBC trend across all 32 species, suggesting that long-term changes in abundance were generally accompanied by changes in distribution.

Of the nine woodland indicator species for which a population trend could not be calculated, Long-eared Owl *Asio otus*, Common Nightingale *Luscinia megarhynchos*, Hawfinch *Coccothraustes coccothraustes* and Capercaillie *Tetrao urogallus* all decreased in breeding range between the two atlas periods (table 1). Reliable population data on the Long-eared Owl are unavailable, but for the other three species there is evidence from other sources of a national decline. The Scottish Capercaillie population has been in serious decline (Moss 2001), although a recent survey suggests that conservation effort may now be bringing dividends (R. Gregory pers. comm.). The Nightingale has shown a marked contraction of range towards southeast England and there is evidence of a substantial decline in numbers during the 1990s (Fuller *et al.* 1999). Based on an analysis of records from local bird reports, a striking decline in numbers of Hawfinches has occurred since the late 1980s (Langston *et al.* 2002).



Robin Chittenden

62. Marsh Tit *Parus palustris* is among the ten woodland species which have declined most since the mid 1960s in Britain (see table 1). This species feeds on invertebrates and seeds in the low canopy, the shrub layer and on the ground. Food availability may have diminished as a consequence of reduction in broadleaved woodland management and the increasing pressure from deer.

Patterns of change

Population trends for the ten species showing an estimated population decline of more than 50% are shown in fig. 1. These trends show a variety of forms. Some species show a more or less steady decline (e.g. Spotted Flycatcher, Marsh Tit); for some, the decline appears to have commenced in the late 1970s or early 1980s (e.g. Tree Pipit, Willow Warbler); while others may have shown an initial increase followed by a decrease (e.g. Lesser Redpoll, Willow Tit). Interestingly, an analysis of long-term ringing data, reaching back to the 1950s, has indicated that Marsh and Willow Tits have been declining since at least the early 1970s (Perrins 2003). The ringing data for Marsh Tit suggest, however, that a substantial decline occurred in the late 1960s and early 70s, with the population levelling out since about 1990. According to the ringing data, Willow Tit has been in steady decline since the early 1970s, which matches the CBC trend very closely.

There is no common pattern in the declining species in terms of their nesting and feeding ecology.

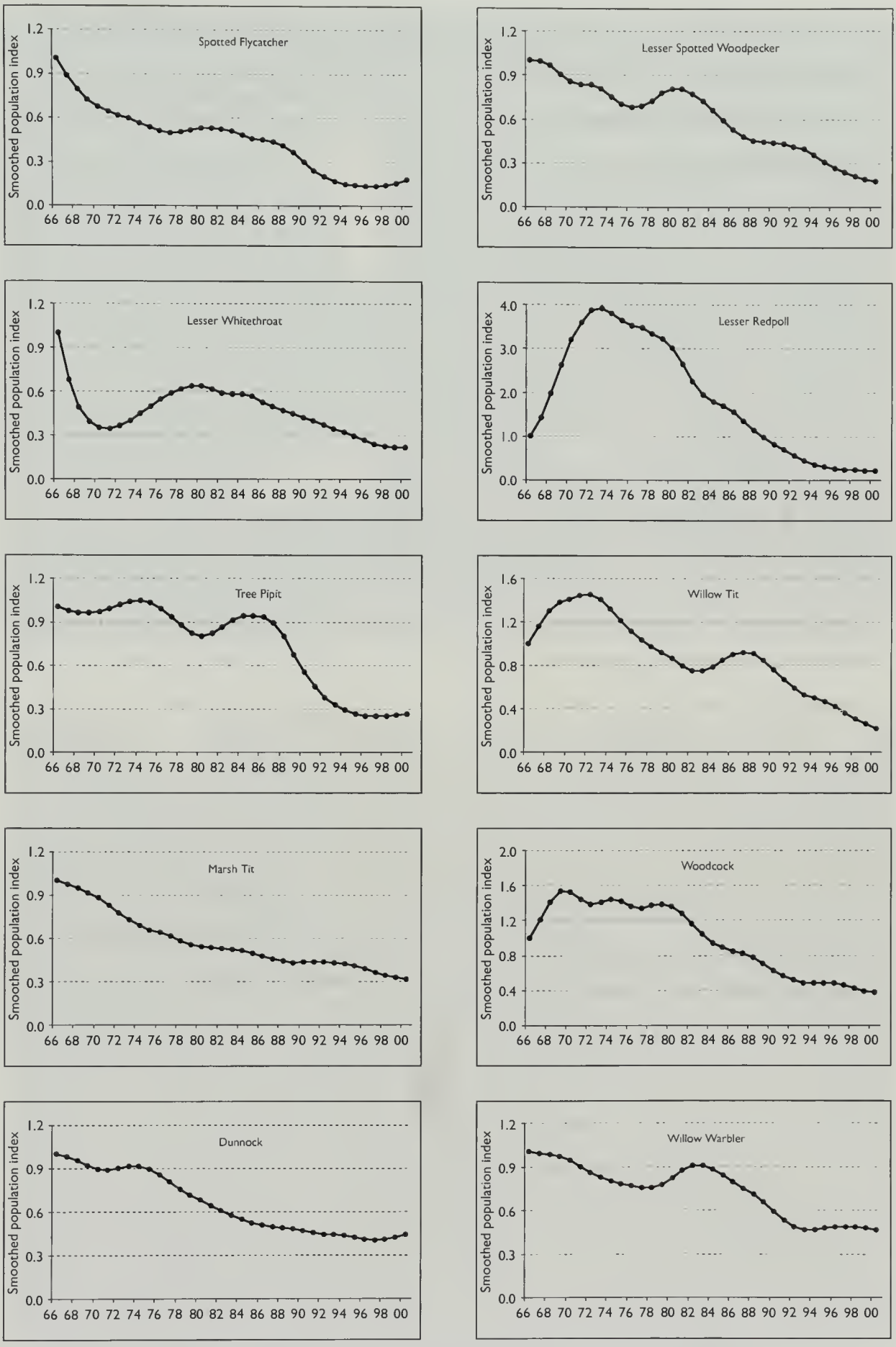


Fig. 1. Estimated population trends for British woodland birds that declined by more than 50% between 1966 and 1999; data from woodland plots of the Common Birds Census. Values are based on smoothed population indices calculated using GAMs (see text). Species are presented in order of estimated population change (see also table 1).



David Tipling/Windrush

63. Hawfinches *Coccothraustes coccothraustes* are scarce and unobtrusive breeding birds in Britain, and hard facts about their decline are difficult to establish. Nonetheless, nest predation, by Grey Squirrels *Sciurus carolinensis* and corvids, could be a factor in this species' marked decline since the 1980s.

They include: (1) long-distance migrants, middle-distance migrants and resident species; (2) specialists of mature broadleaf woodland, mature pinewoods, young conifer plantations and scrub, as well as more generalist species; (3) species which nest in open nests on the ground or in low vegetation, as well as hole-nesting species; (4) species that use a variety of foraging sites; and (5) seed-eaters as well as insectivores and non-insect invertebrate specialists. Numbers of declining, stable and increasing species are shown in relation to selected attributes in table 2. This shows that 50% of migrants, 31% of cavity-nesters, 27% of foliage insectivores and 57% of ground insectivores are classified as declining species. The declines, therefore, are not confined to particular types of species. This, together with the diversity of patterns in trends and range changes described above, suggests that a number of factors are likely to be involved in the declines.



Rob Fuller

64. Coppice regrowth heavily browsed by Roe Deer *Capreolus capreolus*, Suffolk, September 2004. This coppice has had five full summers of regrowth yet the canopy remains extremely open, coarse grasses are abundant, and many coppice stools have been killed by deer. A severely browsed ash stool can be seen in the foreground and the open nature of the coppice can be seen clearly. This is very poor structure for breeding Garden Warbler *Sylvia borin* and Common Nightingale *Luscinia megarhynchos*.



David Tipling/Windrush

65. The range of the Common Nightingale *Luscinia megarhynchos* has strongly contracted towards southeast England in recent decades and there is evidence that numbers declined in the 1990s. Factors on migration and in wintering areas may be important, but a loss of suitable breeding habitat for this species is also implicated, particularly the loss of understorey habitats as a result of, for example, intensified browsing by deer.



Rob Fuller

66. Vigorous coppice, with about five years of growth on the right-hand side of the ride, which has been little affected by deer (compare with plate 64); Suffolk, May 2004. There was a Common Nightingale *Luscinia megarhynchos* territory in this patch at the time the photo was taken.

Large-scale environmental change

Migration and winter conditions

Some of the declines of long-distance migrants are probably driven mainly by changing environmental conditions (climate or habitat change, or both) within their winter ranges or on migration. There is much variation in the winter distributions of migrant woodland bird species (Keith *et al.* 1992; Urban *et al.* 1997). Nonetheless, spatial relationships between wintering and breeding areas, and the general winter ecology of these migrants, are poorly understood (Wernham *et al.* 2002).

Most relevant research has focused on the climatically unstable Sahel region of Africa, which is well north of the winter range of most of the declining species, although most migrate through it. Of the declining migrants, Lesser Whitethroat winters in the eastern Sahel, but four species winter in sub-Saharan or equatorial Africa: Spotted Flycatcher, Tree Pipit, Willow Warbler and Nightingale. Little is known about the pressures faced by these birds in their winter quarters. Not all long-distance migrants have shown major recent declines, though, notably Common Redstart *Phoenicurus phoenicurus* and Garden Warbler *Sylvia borin*. The two middle-distance migrants that winter in southern Europe or North Africa (Blackcap and Chiffchaff *Phylloscopus collybita*) have not declined.

Overwinter conditions in Africa are probably highly spatially variable and, consequently, may have differential impacts not just among species but also among different sub-populations of the same species. Relatively small differences in winter distribution may be associated with large differences in overwinter survival. Clearly, there is a need to improve our understanding, not only of the basic ecology, but also of the conditions within the core winter range of different migrants, as well as along their migration routes. Demographic analyses using existing data can be valuable in determining whether population change is driven by pressures operating within or outside the breeding season. This approach has demonstrated that the widespread decline of the Spotted Flycatcher has probably been caused by reduced survival of birds in their first year of life, rather than by reduced breeding output (Freeman & Crick 2003). Similarly, Peach *et al.* (1995a) found that decreased adult survival was probably linked to the decline in British Willow Warblers, which may be indicative of a more general problem in the wintering areas.

Table 2. Population trend in relation to selected species attributes. The species for which CBC trends are given in table 1 are divided into declining (>25% decline), stable (-25% to +25% change) and increasing (>25% increase).

	Declining species (n=12)	Stable species (n=11)	Increasing species (n=9)
Migrants[1] (n=8)	4 (50%)	3 (38%)	1 (13%)
Cavity-nesters[2] (n=13)	4 (31%)	5 (38%)	4 (31%)
Foliage insectivores[3] (n=15)	4 (27%)	9 (60%)	2 (13%)
Ground insectivores[4] (n=7)	4 (57%)	1 (14%)	2 (29%)

[1] 'Migrants' includes all trans-Saharan and middle-distance migrants: Tree Pipit, Common Redstart, Lesser Whitethroat, Garden Warbler, Blackcap, Common Chiffchaff, Willow Warbler, Spotted Flycatcher.

[2] 'Cavity-nesters' includes all hole-nesters, crevice-nesters and open-cavity nesters: Tawny Owl, Green Woodpecker, Great Spotted Woodpecker, Lesser Spotted Woodpecker, Common Redstart, Spotted Flycatcher, Marsh Tit, Willow Tit, Coal Tit, Blue Tit, Great Tit, Eurasian Nuthatch, Eurasian Treecreeper.

[3] 'Foliage insectivores' includes all species that feed in summer to a large extent on invertebrates gleaned from foliage in the field, shrub or canopy layers: Wren, Common Redstart, Lesser Whitethroat, Garden Warbler, Blackcap, Common Chiffchaff, Willow Warbler, Goldcrest, Long-tailed Tit, Marsh Tit, Willow Tit, Coal Tit, Blue Tit, Great Tit, Common Chaffinch.

[4] 'Ground insectivores' includes all species that feed predominantly on the ground on surface or soil-dwelling invertebrates: Woodcock, Green Woodpecker, Tree Pipit, Dunnock, Robin, Blackbird, Song Thrush.

Climate change and weather patterns on the breeding grounds

The British climate has changed markedly since the eighteenth century, with some of the most striking changes in the last 30 years. Surface air temperatures have increased in all seasons, winters have tended to become wetter, with relatively little snow, and summers drier. There is good evidence that, in the last few decades, climate change has altered the breeding phenology of wildlife in northern latitudes, with an advance in the egg-laying times of birds (Crick *et al.* 1997; Crick & Sparks 1999), the spawning times of amphibians (Beebee 1995) and the active growing season of plants (Myneni *et al.* 1997). There is an indication that populations or distributions of some insects and birds have increased as a result of an upward rise in temperature (Sparks & Woiwod 1999; Thomas & Lennon 1999; Warren *et al.* 2001). The population increase of species such as Little Egret *Egretta garzetta* and Dartford Warbler *Sylvia undata* can probably be attributed to some extent to mild winter conditions. Based on known negative effects of harsh winter weather on population levels, one might expect recent climate patterns to have benefited many resident passerines in Britain (Greenwood & Baillie 1991). Nonetheless, large year-to-year population fluctuations of both birds and insects, in response to annual variations in weather conditions, are still more typical than long-term trends resulting from climate change.

One area of particular concern focuses on the ability of birds to adapt to changing climate. Many insectivorous birds in northern temperate forests depend on a short period of peak availability of Lepidoptera larvae in the breeding season (Naef-Daenzer & Keller 1999). A critical issue, therefore, with respect to climate change, is whether breeding birds could become decoupled from their food supplies. Great Tits in southern England have the capacity to synchronise hatching dates with peak food supplies, mainly by delaying the onset of the incubation period or altering its length (Cresswell & McCleery 2003). The situation may be more serious, however, for long-distance migrants. Pied Flycatchers *Ficedula hypoleuca* in The Netherlands have advanced their laying dates over the last 20 years in response to increasing spring temperatures, yet they are not returning any earlier from Africa (Both & Visser 2001). The timing of migration in some species is determined by endogenous rhythms that are not altered by climate change. Long-distance migrants may be unable, therefore, to adapt the timing of their migration to match changing periods of habitat optimality on the breeding grounds. Interestingly, the Dutch nestbox populations of Pied Flycatchers are declining in rich deciduous forest but not in coniferous and



Richard Chandler

67. Lesser Redpolls *Carduelis cabaret* declined by 78% between 1966 and 1999, according to data from the Common Birds Census (see table 1). In parts of southern Britain at least, one factor implicated in this decline may be the reduced rate of conifer planting within former broadleaved woods, with the concomitant reduction in suitable young forest stands.

mixed forests (Both 2002). This appears to be a consequence of the food peak in deciduous forest now occurring earlier in the year relative to that in coniferous and mixed forest.

An increase in the number of hot days in summer and in the frequency of droughts may have reduced the moisture in woodland soils, which may also have become drier through drainage of land outside the woods. This may have affected availability of soil-dwelling invertebrates, with possible consequences for thrushes and Woodcock. Increasing dryness of woodland could also be a factor for Willow Tits, which show a preference for damp woodland (Perrins 1979).

Climate change may benefit certain species which are either predators or competitors of declining woodland species. It is possible, for example, that recent increases of Great Spotted Woodpeckers, Great Tits and Blue Tits *Parus caeruleus* are, at least in part, driven by changing climate and that the greater abundance of these birds could be having a deleterious effect on other species, for example Willow Tit (see below).

In conclusion, although some woodland species, especially residents, may benefit from climate change, there may in the future be increasing effects on populations acting through: (1) an inability to adjust to new patterns of habitat optimality, especially relevant in migrant birds; (2) effects on food supply, which will probably act mainly through female condition, food supply for chicks or post-fledging survival; and (3) the changing abundance of potential competitors or predators.

Tree condition

There has been a general decline in the health of several tree species across Europe in recent decades, largely as a result of air pollution, with the most severely affected areas in central and eastern Europe (United Nations Economic Commission for Europe & European Commission 2002). Monitoring of selected tree species in Britain since 1987 has revealed significant deterioration in crown density of Norway Spruce *Picea abies* and oak *Quercus* (Hendry *et al.* 2001). The condition of oaks appears to have deteriorated in the early 1990s and trees have not recovered subsequently; could this be significant for woodland birds? Oaks are especially



Rob Fuller

68. External edge of oak *Quercus* woodland, Buckinghamshire, April 2004. Such edges are important habitats for birds in lowland British woods because the diversity of shrubs and trees and density of low vegetation are often higher than elsewhere in the wood. The quality of some edges may have deteriorated in recent years as a result of intensified crop management or livestock grazing on adjacent farmland.

rich in invertebrates and are thus important feeding sites for several of the commoner canopy feeders including Blue Tit (Perrins 1979) and Common Chaffinch *Fringilla coelebs* (Whittingham *et al.* 2001). In a detailed study of patch use by foraging Great and Blue Tits in deciduous woodland, Naef-Daenzer (2000) showed that prey abundance was higher on oak than on Ash *Fraxinus excelsior*, Beech *Fagus sylvatica* or Hornbeam *Carpinus betulus* and that the tits were foraging preferentially in oaks. The species that forage within mainly oak canopies are not, however, among the declining woodland birds.

In many cases, deterioration of tree health, whether caused by pollution, disease or insects, is likely to be beneficial to birds. For example, one factor affecting the health of oaks is an abundance of defoliating insects (Gradwell 1974), and insect damage may be the main cause of reduction in oak canopy density (Hendry *et al.* 2001). This may, however, benefit many woodland bird species, as the majority feed on defoliating Lepidopteran larvae when these are superabundant. Similarly, a decline in the condition of Beech trees often leads to an increase in seed production (Nilsson 1985; Hendry *et al.* 2001), which is likely to benefit many seed-eating birds in the short term. Increased stress on trees because of drought or air pollution may also increase their susceptibility to insect attack and this may be good for insectivorous birds (van Noordwijk 1990). In addition, a decline in tree condition may be to the advantage of some birds, for instance woodpeckers, by increasing the availability of dead wood. Conversely, crown thinning and leaf loss may increase the exposure of nests and feeding birds to predators, and reduce food availability (Hake 1991; Zang 1990).

Over recent decades, Britain has received lower levels of air pollutants compared with many other parts of Europe, and there has been no large-scale dieback of forests comparable to that in central Europe. Is it possible, however, that more subtle effects of air pollution have affected the quality of trees as foraging habitats for birds? Studies in Sweden and The Netherlands suggest that increased acidification of forest soils, caused by air pollution, can lead to eggshell defects and lower productivity in some forest passerines through both a reduction in the abundance of calcium-rich invertebrates and an increased exposure to aluminium (Graveland 1998). In Scandinavian conifer forests, loss of foliage is linked with a reduction of spiders (Gunnarsson 1990) and with greater levels of vigilance and lower feeding times for Willow Tits (Hake 1991). Even if such effects are occurring in British forests, their impact at the population level is not evident. The most abundant species that forage for insects within the canopy of mature closed woodland (Goldcrest, Coal Tit, Blue Tit, Great Tit, Chaffinch) have remained stable or increased (table 1). There is also little evidence that an increase in soil acidification has affected woodland birds in Britain. Ramsay & Houston (1999) found no effect of providing supplementary food on the incidence of eggshell defects in the Blue Tit in an area of west-central Scotland affected by acid precipitation, despite low levels of calcium-rich invertebrates in their study area. Using data from museum specimens, Green (1998) showed that there have been widespread declines in the eggshell thickness of four *Turdus* thrushes in Britain since the nineteenth century, but acidification was only one possible mechanism for this.

In conclusion, while there may have been some large-scale changes in the health of trees in recent years, these are unlikely to be responsible for the observed declines in woodland birds. Indeed, there are reasons for thinking that, at least in the short term, deterioration of tree health may be advantageous to several bird species. Broad changes in tree-species composition as a result of major disease could, however, be significant for birds. Dutch elm disease is discussed below and it is worth noting that there is growing concern about the *Phytophthora* fungal pathogens, which affect a range of tree species in western North America and Europe, including Britain.

General reduction in invertebrate populations

With the exception of butterflies, there is no long-term monitoring of invertebrate abundance within woodland and it is possible that large changes have gone undetected.

In the last few decades, many specialist woodland butterflies have declined in Britain, in parallel with some of the bird declines (Asher *et al.* 2001; Thomas *et al.* 2004). One of the key factors is thought to be the reduction of active management of broadleaved woodlands, particularly the virtual cessation of coppicing. This reduction of management, together with the

associated loss of open, early successional habitats within woods, is likely to affect a wider range of invertebrates (Fuller & Warren 1991).

There is clear evidence of decreases in invertebrate availability on farmland (e.g. Sotherton & Self 2000, Benton *et al.* 2002). For a variety of reasons, many of which are discussed elsewhere in this paper, there could have been a widespread and general decline of invertebrates within woodland in recent decades. Climate change, deterioration of tree health and land drainage could all potentially affect woodland birds by altering the abundance or seasonal availability of insect food. Diffuse pollution, including drift of agricultural sprays, could also affect both the abundance of invertebrates within woodland and the quality of invertebrates as food for birds. Furthermore, relatively few major defoliation events in oak woodland have occurred in central England in recent years (Harding 2002; C. M. Perrins, RJF and KWS unpubl.). Large episodic outbreaks of defoliating caterpillars are exploited by most woodland birds and may be linked with higher breeding success of some species and possibly may affect spatial patterns of settlement.

Large-scale trends in land management and land use

Agricultural intensification and habitat change outside woodland

Woodland birds often use resources outside woodland and many nest or feed in hedgerows on farmland (Fuller *et al.* 2001). Factors influencing the quality of hedges for birds differ among species, but those most commonly affecting abundance of breeding birds are hedge size (height, width, volume) and the quantity of trees (Hinsley & Bellamy 2000). Changes in hedge management and the loss of hedgerow trees are likely to have diminished bird abundance within many hedges in recent decades, and this could also help to explain some bird declines within woodland. Some woodland birds probably use hedges outside the breeding season, including the post-fledging period when many juveniles are dispersing. If the quality of hedgerows deteriorates, then survival may be reduced. Bullfinch, Song Thrush, Willow Warbler and Lesser Whitethroat are examples of species that may depend in this way on a matrix of woody habitats. Interestingly, Hinsley *et al.* (1995) found that the presence of Bullfinches in



David Tipling/Windrush

69. A key factor in the decline of the British Song Thrush *Turdus philomelos* population is thought to be a reduction in survival during the first winter, and perhaps also in the post-fledging period. Loss of damp areas outside woodland has resulted in a shortage of invertebrate food. Within woodland, as with several other declining woodland birds, canopy closure, due to a lack of management, and deer browsing have probably affected quality of understorey vegetation for nesting.

small woodlands in the East Anglian fens was related to the amount of hedgerow in the area surrounding the wood. Furthermore, in a study of recently created farm woods, Vanhinsbergh *et al.* (2002) found that woods connected to dense hedges with trees were utilised by more species of birds than those connected to hedges without trees. These findings could, of course, reflect the use of hedges as movement corridors as much as a requirement for a combination of woodland and hedgerow habitats.

Farming practices have also affected land adjacent to woodland, potentially limiting the feeding opportunites for some woodland-edge species, such as Song Thrush (Peach *et al.* 2004). The whole pattern of land use surrounding many woods has changed greatly in recent decades, with large-scale efficient drainage, the simplification of rotations and the loss of much mixed farming. Pesticides are often applied to field margins (Boatman 1992), many of which run alongside woodlands, and this practice is likely to influence the availability of seeds and invertebrates for birds using field margins for foraging.

Farming activities can strongly modify woodland edges through drift of agricultural chemicals, trimming of wood edges, heavy grazing by livestock and cultivation right up to the woodland edge. Each of these factors could affect the food resources available to some woodland birds. External edges are important for many woodland birds because they may provide a range of resources that can be scarce in the woodland interior (Fuller 1995; McCollin 1998). This is likely to be especially true in historically fragmented landscapes such as those of Britain.

Fragmentation and loss of woodland

Have changes in the total area and spatial pattern of woodland been responsible for the observed changes in woodland bird populations? At first sight, this seems unlikely because the available measures of population change for woodland birds are actually related to changes in density *within* existing woodland. Furthermore, the total area of woodland is increasing in Scotland, England and Wales. The overall trends, however, conceal substantial losses of ancient semi-natural woodland and changes in species composition of many woods. Approximately 7% of the area of ancient woodland present in about 1930 was converted to other land uses, mainly agriculture, over the following 50 years (Spencer & Kirby 1992; Peterken 1993). Although there is no evidence that ancient woods *per se* are of particular importance as bird habitats, substantial areas of ancient broadleaved woodland were replanted with conifers. By the late 1980s, plantations occupied 40% of the area of ancient woodland extant in 1930 (Spencer & Kirby 1992). Haines-Young *et al.* (2000) showed that, between 1990 and 2000, there was a net increase of 5% in the area of broadleaved woodland in Britain. This overall figure masked a significant turnover, however, with 7% of the broadleaved woodland present in 1990 lost by 1998, and an increase of 12% in new broadleaved woodland.

Large-scale loss of woodland habitat could theoretically affect population persistence and densities within surviving fragments. If metapopulation dynamics (Hoopes & Harrison 1998) were operating for woodland birds, the loss of woods could affect population persistence within remaining sites. Alternatively, if some woodland patches acted as population sources and others as population sinks (Hoopes & Harrison 1998), the loss of source patches could have a severe effect on population survival elsewhere. Even allowing for these possible processes, it is questionable whether the scale of loss of ancient and other woodland has been sufficient to cause large-scale reductions in woodland bird populations. Declines of several species have been evident even in regions which have retained relatively high woodland cover, for example Kent and Sussex. Nonetheless, work in eastern England, where woodlands are highly fragmented, shows that several species avoid breeding in small (<1 ha) woods, including Eurasian Treecreeper *Certhia familiaris*, Nightingale, Marsh Tit, Long-tailed Tit *Aegithalos caudatus*, Eurasian Jay *Garrulus glandarius* and Chiffchaff (Hinsley *et al.* 1995, 1996).

The dispersal behaviour of birds is highly relevant to understanding the effects of woodland isolation. Nuthatch and Marsh Tit are particularly sedentary species (Matthysen & Schmidt 1987; Nilsson 1989). The absence of Nuthatch from suitable habitat in parts of eastern England is probably a consequence of woodland isolation (Bellamy *et al.* 1998). Habitat fragmentation also negatively affects settlement rate and patch occupancy by Nuthatches (Matthysen & Currie 1996). At a national level, the fact that Nuthatch, one of the

species predicted to be most sensitive to loss of broadleaved woodland and to increasing isolation of woods, is increasing so strongly (table 1) suggests that the effects of recent woodland fragmentation are unimportant at this scale.

Age structure of woodland

The overall age structure of forest plantations in Britain has changed considerably in recent decades as a consequence of planting patterns. The area of young plantations (<20 years old) was especially high in the 1960s and 1970s but has decreased since. The National Inventory of Woodland for England illustrates some of the changes (Forestry Commission 2001a, table 25). In 1998, there were c. 123,000 ha of category 1 high forest of <18 years old, compared with 190,000 ha of <20 years old in 1980. Defined in this way, young plantations represented c. 15% of English high forest in 1998 and 25% in 1980. Correspondingly, the area and relative contribution of older stands has increased. In 1998, there were c. 221,000 ha of stands >68 years old, compared with 172,000 ha of >70 years old in 1980. These data are for high-quality timber stands and it should be noted that the age-class categories (years since planting) and survey methods differ slightly for the two study years.

The growth stage of woodland, whether plantation or coppice, is one of the fundamental influences on the composition of bird communities, with many species showing strong associations with particular stages (Fuller 1995). Could the changes in age structure of woodlands since the 1970s account for the decline in some woodland birds? Lesser Redpoll, Tree Pipit, Willow Warbler and Dunnock are among the declining species which are typical of young woodland (Fuller 1995). The maturation of conifer plantations has probably reduced habitat availability for Lesser Redpoll and Tree Pipit in central and southern England, where these species have decreased markedly. It is questionable whether the same is true in Scotland, where there continues to be much suitable breeding habitat. In eastern England, Willow Warbler densities declined greatly in young coppice plots of similar age during the 1990s (RJF unpubl.), suggesting that factors other than the age of the stand were implicated. Densities of other bird species are relatively low in 'middle aged' stands and increase in old, better structured stands (Fuller 1995; Donald *et al.* 1998). From the available woodland census data, it is difficult to be sure whether the amount of 'middle aged' stands has increased, but we can be reasonably certain that changes in the amount of young woodland have contributed to some of the observed declines in southern Britain.

Tree-species composition

Over the last century, there have been huge changes in the tree-species composition of British woodlands, dominated by the massive planting of conifers and the use of non-native trees (Locke 1987; Forestry Commission 2001a). Nationally, the increase in conifers has been dominated by planting of Sitka Spruce *Picea sitchensis*, especially in upland Wales and Scotland, and Lodgepole Pine *Pinus contorta*, while the planting of Scots Pine *P. sylvestris* and Norway Spruce has recently decreased. Since 1960, the amount of oak planted has more than halved and birch *Betula* planting has also decreased substantially. There has also been significant loss of mature elm *Ulmus* from some woods and the landscape as a whole, as a result of Dutch elm disease, which reached epidemic proportions in the 1970s.

Apart from the clear broadleaved/conifer distinction, few British birds show a strong association with particular tree species and most woodland birds use a wide range, both native and non-native (Fuller 1997). There is no evidence that the introduction of non-native species has had a detrimental effect on bird populations at a national scale. Locally, however, the introduction of non-native trees, particularly the planting of former broadleaved woods with conifers, has probably altered the composition of bird communities. Some bird species are specialists of broadleaved woods and others of coniferous woods; Fuller (1997) listed 17 of the former and nine of the latter. Several of the broadleaved specialists are declining (Lesser Spotted Woodpecker, Nightingale, Pied Flycatcher, Marsh Tit, Willow Tit and Hawfinch) but only one conifer specialist, Capercaillie, is declining. This does not imply, however, that the national increase in conifers and reduction in broadleaves is responsible for the decline of the broadleaf specialists. There are many examples of declines that have occurred within woodland which has not changed greatly in tree-species composition. Furthermore, as well as the declining species, the numbers of several birds strongly associated

with mature broadleaved woodland have either remained stable or increased in recent years, including Blue Tit, Great Tit, Nuthatch, Treecreeper and Chaffinch (table 1).

Intensity of woodland management

We are not aware of any general trends in management techniques (i.e. silvicultural treatments) over recent decades that are potentially damaging *per se* to the habitats of woodland birds on a large scale. Pesticide usage within lowland woodland is minuscule compared with that in farmland; even in tree establishment, their use is local, and at a lower level than several decades ago (Gary Kerr pers. comm.).

It is far more likely that decreasing, rather than increasing, intensity of management in existing woodland has led to recent changes in habitat quality for some birds. Many woods became neglected during the twentieth century, especially coppiced woods. Abandoned coppice rapidly loses its understorey, as the canopy closes and assumes a relatively stable, multi-stemmed, simple structure (Fuller 1995). Such woods support extremely low densities of breeding birds and low numbers of species. Eventually they may develop a more complex structure as individual trees die and the canopy gradually opens, but this process takes several decades. Declining woodland management is evident in other types of woodland too. Many farm woods have become neglected, while, in managed woods, owners have tended to reduce stand thinning, which has become uneconomic with falling timber prices (Gary Kerr pers. comm.). A reduction of woodland management is consistent with the findings of the Countryside Survey (Haines-Young *et al.* 2000). This survey showed a significant loss of plant species richness from broadleaved woods in England and Wales between 1990 and 2000, and a shift to species requiring more fertile conditions. There was also a small change in the average light score of woodland plants, consistent with more closed canopy conditions.

These processes could have several effects on habitat quality. The resulting canopy closure will have often shaded out Bramble *Rubus fructicosus* agg. and other low vegetation, with possible consequences for warblers and other species that use low vegetation, such as Dunnock and Marsh Tit. Loss of open space has occurred within some woods as rides and glades have become grown over; this may have affected Tree Pipits. Increased shading is likely to lead to declining plant diversity in the field and shrub layers, which in turn would diminish the quality of year-round food supply for species such as Marsh Tit. These types of habitat change are widespread in lowland woods. We suggest that factors associated with reduction of management in broadleaved woods may be important in reducing habitat quality for some woodland birds.



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70. Few woodland species are doing better than Eurasian Sparrowhawk *Accipiter nisus*, which has increased in both numbers and distribution since the 1960s as the population has recovered from the effects of pesticides.

Recreational pressure

Recreational use of the countryside has increased enormously over the last 50 years. In state forests in Britain in 2001 there were 681 car parks, 647 forest walks, 369 picnic sites and 190 cycle trails (Forestry Commission 2001b). The potential effects of human disturbance on birds depend on the type of activity, the habitat and the sensitivity of the species. Studies in The Netherlands have claimed to demonstrate negative effects of recreational pressure on woodland bird abundance (van der Zande *et al.* 1984; Jansen & de Nie 1986). This work was inconclusive, however, because birds could have been responding to a range of other factors that were not measured. Nonetheless, there is growing evidence from North American forests that recreation can affect the composition of bird communities and the behaviour of birds (e.g. Gutzwiller *et al.* 1998, Miller *et al.* 1998). These effects could potentially reduce territory quality in moderately or highly disturbed areas, and result in reduced breeding productivity. Human recreational activities are most unlikely to be responsible for recent national declines in woodland birds, but local impacts are highly likely. Woodcock is a potentially vulnerable species, especially where dogs are involved (Estoppey 2001).

Road traffic

The volume of traffic using British roads has increased inexorably for many years. For example, between 1985 and 2002, road traffic increased by c. 45%, and sample annual increases include 5% in 1973, 4% in 1978, 5% in 1984 and 8% in 1989 (www.dft.gov.uk). There could be several implications for birds, including direct mortality as a result of collisions; deteriorating habitat quality near roads through pollution, the visibility of moving traffic, and traffic noise; and the adverse effect on nocturnal species of vehicle headlights. The increase in bird and mammal roadkills has provided Carrion Crows *Corvus corone* and Magpies *Pica pica* with extra food, which may have contributed to their population increases, in turn perhaps leading to higher rates of predation on nesting songbirds.

It seems highly unlikely that traffic could be



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71. Deer fence, Suffolk, May 2004. This shows a striking comparison between dense regrowth of coppice vegetation inside a deer fence, and the considerably reduced regrowth outside the fence (foreground) where Roe Deer *Caprealus caprealus* and Muntjac *Muntiacus reevesi* have been feeding. Use of deer fences is one approach to improving habitat quality for birds that depend on vigorous undergrowth. However, the use of fences to improve regeneration of native pinewoods in Scotland has caused substantial mortality of Capercaillie *Tetraa uragallus* and other gamebirds as a result of collisions (Summers 1998). We are unaware of serious fence-related bird mortality in the south of Britain.

a major contributor to the general declines in woodland birds, because all the key species show declines in wooded areas away from major roads. Nonetheless, there could be local effects where traffic levels are high. This was found to be the case in The Netherlands, where several species appeared to avoid nesting close to major trunk roads (Reijnen & Foppen 1994; Reijnen *et al.* 1995), with noise considered to be the main causal factor.

Game management

Some 20 million Common Pheasants *Phasianus colchicus* are released each year in the UK (Tapper 1999). According to the statistics of the National Game-Bag Census, the average density of Pheasants released rose from c. 50 per 100 ha in the mid 1960s to over 200 per 100 ha by 1999 (Tapper 1999). Management techniques used to improve Pheasant habitat in woodland may be beneficial for some songbirds (Hill & Robertson 1988; Tapper 1999), but there are also potentially negative effects of high Pheasant densities that have not been studied adequately. These include the effect on the structure of the field layer, the spread of disease and parasites, and competition for food. Guidelines for good management practice recently developed by the Game Conservancy Trust (2003) seek to minimise adverse impacts, and stress the importance of maintaining a well-developed shrub layer to provide cover for Pheasants. Achieving this desired habitat structure is not always easy, however, and attempts to stimulate regrowth of the shrub layer by coppicing can often fail owing to pressure from deer and shading from the canopy.

Fine-scale trends in habitat quality

Grazing and browsing pressure

Most species of deer have become much more common in recent decades, although this is part of a longer-term pattern (Fuller & Gill 2001). There is now considerable and widespread concern about intensified deer pressure in lowland England, but there are long-standing problems of severe browsing by Red Deer *Cervus elaphus* in Highland forests too (Clutton-Brock 2004). Since the mid 1970s, there has also been a rise in the number of sheep in Britain, especially in Wales, southwest and northern England (Fuller & Gough 1999). This has probably resulted in more intensive grazing of some upland woods which were already grazed by sheep, whereas the rising numbers of deer in the English lowlands have resulted in many previously ungrazed or lightly grazed woods becoming heavily grazed.

The effects of grazing on trees, shrubs and woodland structure are well documented (Gill & Beardall 2001), and several general patterns can be identified: (a) a reduction in the density and height of woody stems; (b) the removal of other low palatable vegetation, especially Bramble, leading to an open understorey; (c) an increase in unpalatable species, notably grasses; and (d) a likely reduction in the species richness and diversity of trees. Examples of how increased pressure from deer has affected the vegetation structure in particular woods or woodland types are given by Cooke & Farrell (2001), Fuller (2001) and Morecroft *et al.* (2001). The mechanisms by which deer potentially affect woodland birds were described by Fuller (2001), but are chiefly through the impact on low vegetation structure on which many bird species depend, either for nesting cover or for food (Fuller 1995).

Circumstantial evidence indicates that grazing pressure can affect bird abundance. For example, Donald *et al.* (1998) demonstrated that the bird community in those parts of the Forest of Dean grazed mainly by sheep had a lower proportion of breeding summer visitors such as Willow Warbler and Blackcap than ungrazed areas, which held a greater abundance of small, broadleaved trees. In Oxfordshire, there was a large reduction in breeding populations of species that nest in low vegetation in Wytham Woods during the 1980s and 1990s, while overall numbers of hole-nesting birds have remained relatively constant (Perrins & Overall 2001). These declines coincided with a massive reduction of Bramble by Fallow Deer *Dama dama*. In Bradfield Woods, Suffolk, growing pressure from Roe *Capreolus capreolus* and Muntjac Deer *Muntiacus reevesi* caused a reduction in the height and cover of coppice regrowth, together with an increase in coarse grasses (Fuller 2001). These vegetation changes coincided with a large decrease in Nightingales, which require a combination of low dense thickets and patches of bare ground within these thickets for feeding (Fuller *et al.* 1999). Experimental evidence that deer can alter woodland bird communities is currently lacking in Britain, but is available from two North American studies in which densities of

White-tailed Deer *Odocoileus virginianus* were manipulated (deCalesta 1994; McShea & Rappole 2000). In both cases, deer affected the composition of bird communities: higher numbers of birds dependent on low vegetation were found in plots with low densities of deer, or no deer.

In conclusion, it is highly likely that the trend of increased grazing pressure in many woods has reduced habitat quality for species that depend on low vegetation. Conversely, those species which prefer an open woodland structure, notably Common Redstart and Wood Warbler, may benefit. The effects of deer on woodland structure are complex and variable, but it is likely that an increase in large herbivores has contributed, at least on a local scale, to declines in some woodland birds, particularly Nightingale, Dunnock, Song Thrush, Willow Warbler, Marsh Tit, Willow Tit and Bullfinch. Not all changes in woodland structure should be attributed to grazing, however, since other factors, such as climate change, succession and stand management, may also be important.

Availability of dead wood and nest holes

Dead and decaying wood is an important component of habitat quality for some woodland birds, either by providing nest-sites or as a source of food. It is convenient to treat dead wood and nest holes together, even though not all hole-nesters select holes in dead wood (Glue & Boswell 1994; Smith 1997; Wesołowski 2002; Wesołowski & Rowiński 2004). Has there been a reduction in dead and decaying wood in recent decades, and could this have contributed to population declines in some woodland birds?

Several factors are likely to have *increased* the amount of dead wood in recent years. Severe storms in 1987 and 1990 caused the death of many trees and extensive branch loss in south-east England (Kirby & Buckley 1994). The storm of October 1987 appeared to double the amount of dead wood in some English woods immediately following the storm (Kirby *et al.* 1998), although this may have been short-lived in some areas owing to clearance. The drought of 1976 also caused considerable tree death (Peterken 1996). Dutch elm disease, which reached its peak during the 1970s, temporarily increased the abundance of dead trees (Osborne 1983). Furthermore, larvae of the *Scolytus* beetles that spread the fungal pathogen are abundant on recently dead trees and these formed a food source for woodpeckers and tits (Osborne 1985). This was a temporary glut, however, as felling of the dead elms became normal practice. Many woods in lowland England, especially former coppice, have long been neglected, which has probably led to an



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72. The Wood Warbler *Phylloscopus sibilatrix* was upgraded to the Amber list of Birds of Conservation Concern at the last review (Gregory *et al.* 2002), to reflect a moderate decline in the UK population as shown by the BTO/JNCC/RSPB Breeding Bird Survey over the period 1994 to 2000.

increase in the total amount of dead wood, which is more abundant in unmanaged stands (Kirby *et al.* 1991, 1998).

Locally, woodland management may have reduced the availability of dead wood recently. Although, in the long term, there has been an overall reduction in the exploitation of woodlands for firewood, the rising popularity of wood-burning stoves may have led to more intensive extraction of dead wood in some areas. In woodlands where public access is encouraged, there has probably been some removal or management of old trees for safety reasons. Elsewhere, there will have been some harvesting of mature broadleaved stands containing living trees with dead branches. Overall, however, we suggest that these factors are unlikely to have been sufficient to create a net decrease in dead wood over the last three or four decades.

It seems unlikely that the amount of dead wood is a key factor in the declines of woodland birds. Nonetheless, its availability varies greatly among woods (Kirby & Buckley 1994; Peterken 1996; Kirby *et al.* 1998), and local trends may have affected some species. It is also possible that changes in the type and quality, rather than the quantity, of dead wood may have occurred at many sites, which could be relevant to the two declining dead-wood specialists. For example, apparently suitable sites for Willow Tits may, in fact, not be at a suitable stage of decay for nest excavation, while storms may have reduced the suitability of some woodland areas for Lesser Spotted Woodpeckers by destroying many of the small, dead branches which are preferred foraging sites outside the breeding season (Olsson *et al.* 1999). Much dead wood within woodland is probably of little value to birds for foraging or nesting, but nonetheless we need an improved general understanding of the relevance of dead wood to the ecology of woodland birds.

Reduction in lichens

Epiphytic lichens may be important for food location and storage, as well as offering material for nest construction. In boreal forests, lichens are important habitats for spiders and other invertebrates and they provide major foraging sites for insectivorous birds, including Willow and Crested Tits *Parus cristatus* (Cramp & Perrins 1993). Both air pollution and forestry activities can reduce the abundance of lichens; is it possible that this has occurred in British woodland, with consequences for some insectivorous birds? In Sweden, studies have demonstrated that lichens and associated invertebrates are less abundant on branches of spruce trees in managed than unmanaged forests (Petterson *et al.* 1995; Petterson 1996). This may be because rotations are too short to allow lichens to accumulate, which may reduce food availability for passerines (Petterson *et al.* 1995). However, several woodland birds are declining in parts of Britain that have been relatively poor in lichens for many decades (lichens tend to be far more abundant and luxuriant in western and northern woods), and there is no evidence that *recent* changes in the status of lichens have reduced habitat quality for birds significantly. Furthermore, it is still unclear whether lichens are such an important microhabitat feature in temperate as in boreal woodland.

Pressures from other organisms

Predation pressure

Predation can affect bird populations in two broad ways – by reduced survival of both adults and juveniles, and by reduced productivity linked to nest predation. Predation is the largest cause of nest failure in most birds, and in some cases it may be sufficient to suppress or reduce the breeding population (see Newton 1993, 1998). Several potential predators of woodland birds in Britain have increased over the last 30 years. The main problem in determining whether this may have contributed to bird declines is that, even if the level of predation is known, the impacts at the population level are often difficult to predict. There have been few studies of the role of nest predation in the population dynamics of woodland birds in western Europe, and rather little is known about the relative importance of different types of predator and, most importantly, how productivity interacts with the other demographic processes to determine population levels.

The Grey Squirrel *Sciurus carolinensis* has increased in Britain in terms of both density and range. It is now almost ubiquitous in England and Wales, and continues to increase in Scotland, leading to widespread concerns about its effect on nest predation of woodland songbirds. The potential impacts of the Grey Squirrel could be greater than those of the displaced native Red Squirrel *S. vulgaris* because the body size and population density of the

former are greater. Squirrels are major nest predators of woodland birds in parts of the USA, and a recent summary suggested that, potentially, Grey Squirrels are major predators of nesting songbirds in Britain (Hewson *et al.* 2004). A wide range of songbirds, including ground-nesters and hole-nesters, are potentially vulnerable, but canopy-nesters, particularly Spotted Flycatcher, Chaffinch and Hawfinch, seem most at risk. Unfortunately, the information currently available is largely anecdotal and a systematic study of Grey Squirrel predation is required. Most other mammalian predators do not appear to have increased significantly in Britain, with the possible exception of the Red Fox *Vulpes vulpes* and, more locally, the Badger *Meles meles* (Harris *et al.* 1995).

The most important avian predators in woodland are woodpeckers, corvids, owls and raptors. Jays are an especially important predator of birds' nests (Schaefer 2004), but there is little evidence of a long-term increase in Jays in Britain (Crick *et al.* 2004). Great Spotted Woodpeckers are major predators of tit nests (Perrins 1979) and a marked population increase in the woodpecker raises the possibility of a link with the declines in Willow and Marsh Tit. National population trends (from BTO data) reveal no relationship between these tits and the numbers of woodpeckers or Jays, with the exception of a negative relationship between Willow Tit and Great Spotted Woodpecker on farmland (Siriwardena 2001, 2004), but it remains a possibility that such relationships might exist at a local level. The Great Spotted Woodpecker is also the most serious nest predator of the Lesser Spotted Woodpecker (Cramp 1985).

Many studies suggest that nest predation is higher along woodland edges than in the woodland interior (e.g. Paton 1994, Andrén 1995, McCollin 1998). Work in North America indicates that such edge effects depend on landscape context (Donovan *et al.* 1997; Chalfoun *et al.* 2002). Nest predation rates at edges may be relatively high where forest meets agricultural land, compared with edges within forests, such as clear-cuts within mature forest. In Britain, the small-scale clearance and replanting of woodland has led to an increase in the general patchiness of the woodland landscape, and this may have increased nest predation rates of some birds. Even where there has been no recent change in woodland habitat, predation rates at the woodland edge may have risen through the increase in predators (notably corvids) associated with surrounding farmland. However, studies undertaken in relatively recently fragmented landscapes, such as those of eastern and midwestern North America, should not be extrapolated directly to landscapes with a far longer history of fragmentation, where birds have had more time to evolve effective anti-predator traits. There is clearly a need for far more work on relationships between forest edges and the breeding success of birds in European woodland.

More generally, there is little evidence of clear links between woodland songbird numbers and the abundance of avian predators (McCleery & Perrins 1991; Newton 1993, 1998; Newton *et al.* 1997; Thomson *et al.* 1998). The drawback with many existing studies is that they have considered the impact of predators on locally stable or increasing songbird populations, many of the study areas having been supplemented with nestboxes. The effect of predators on declining or non-supplemented populations may be much more pronounced; in other words, predation could have an important secondary effect when populations are already under pressure from other factors. Furthermore, studies have tended to focus on relationships with particular predator species, notably Sparrowhawk (see review in Newton 1998), and other, less well-studied, avian predators may have population effects on some woodland birds in certain situations. There may also be cumulative effects from different predators that would not be apparent from studying a single predator species.

Interspecific competition

Interspecific competition may limit the populations of some species where resources are in short supply. Several experiments have demonstrated convincingly that competition for nest-sites or food supplies can affect local abundance and distribution of forest birds (reviewed by Newton 1998). It is possible, therefore, that changes in population levels, or even behaviour, of competitors may be a causal factor in the decline of some British woodland birds.

Some of the declining woodland species are candidates for the interspecific competition hypothesis, including Marsh Tit, Willow Tit and Lesser Spotted Woodpecker. In Sweden, Marsh Tits are subordinate in their choice of nest-sites

to Blue Tits, Nuthatches and Common Starlings *Sturnus vulgaris* (Nilsson 1984). In the presence of these other species, they are forced to use lower nest holes which may be more susceptible to predators. It is unknown whether Marsh Tits in Britain are subject to this type of competition, but it could be one explanation for their decline in British woodland, given that Nuthatches and Blue Tits, as well as Great and Coal Tits, have increased in recent years (table 1). The Willow Tit also competes with several other tit species for foraging sites (Alatalo 1982; Dhondt 1989), though we are unaware of any British studies of foraging interactions involving the Willow Tit. Have the increases in other tit species placed extra pressure on Willow Tit populations? A preliminary analysis of Marsh and Willow Tit population trends found no negative relationships with Blue Tit and Great Tit numbers (Siriwardena 2001, 2004), yet the most convincing example of how interspecific competition might affect a declining woodland bird involves these three species. In Lanarkshire, Great and Blue Tits commonly usurp the nest-sites of Willow Tits (Maxwell 2002, 2003). Out of 30 Willow Tit 'pair-years', Maxwell (2002) reported 18 instances of Blue Tits and two of Great Tits taking over nests. It appears that the aggressive takeover frequently occurs just as the nest excavation is being completed. Because Willow Tits invest considerable time and energy in excavating a nest-site, its loss could result in a serious delay in breeding. It is unclear how widespread this phenomenon is, though it appears not to be new.



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73. Although reliable population trends are not available, the breeding range of Long-eared Owls *Asio otus* decreased between the two national breeding-atlas periods (1968-72 and 1988-91).

The decline of the Lesser Spotted Woodpecker in Britain has occurred at the same time as an increase in the Great Spotted Woodpecker (table 1). Nilsson *et al.* (1992) suggested that, in Sweden, Great Spotteds compete with Lesser Spotteds for insect food in dead wood when spruce seed crops are low. Whether the two species compete for food in Britain is uncertain, but in addition the two may compete for nest-sites, since they overlap considerably in their use of different nesting substrates (Glue & Boswell 1994).

Interspecific competition between woodland birds and other taxa may also have affected some British woodland bird populations. Grey Squirrels commonly use tree cavities and can be an effective competitor with Tawny Owls and other large hole-nesting species (Hewson *et al.* 2004). Grey Squirrels feed on many different types of tree seeds, which also form a food for several birds. Similarly, deer may consume large

amounts of tree seeds and seed plants that are used as food sources by many seed-eating and insectivorous birds.

Finally, it is possible that the widespread feeding of garden birds may have contributed to growing interspecific competition by favouring adaptable species which readily use feeders, such as Blue and Great Tits. Garden feeding may also be a factor in the increase of Great Spotted Woodpecker, while in some areas it clearly benefits Grey Squirrels, with potential implications for predation rates.

Parasites and disease

Could parasites or pathogens be elements in the declines of woodland birds? These factors have not emerged as significant in the declines of farmland birds, where one might expect them to be more prevalent, owing to the fact that many farmland species are highly gregarious, especially in winter. One area that may be especially worth examining is whether the concentration of birds at garden feeders increases the risk of disease transmission. This is unlikely to be a direct factor for any of the declining woodland species, however, since few of them (with the possible exception of Marsh Tit) use feeders extensively.

Newton (1998) thought it likely that parasites and disease were less prevalent as major limiting factors for breeding numbers than predation or food shortage. Nonetheless, he pointed out that many species could experience occasional epidemics with medium-term consequences for population size. Furthermore, he acknowledged that risk of disease was not independent of other factors such as deteriorating food supplies and pollution.

Conclusions

There is no overarching hypothesis for the declines of woodland birds as there was with agricultural intensification and farmland birds (Fuller *et al.* 1995). Instead, a range of plausible hypotheses may act in a species-specific manner. Interactions between different limiting factors may be critical. For example, there may be several interactions between predators and other factors. Birds could become more vulnerable to predation as nesting cover is reduced by deer, or as food supplies diminish and birds are forced to spend more time foraging (Newton 1998; Evans 2004). Some woodland birds could be affected simultaneously by several factors that, even if not interacting, may combine in a diffuse way sufficient to reduce recruitment or survival. Changes in food supply, predation, interspecific competition and physical deterioration of habitat may be acting simultaneously on some species. We think it very likely that multiple factors have exerted a combined effect. Nonetheless, certain factors emerge as having the potential to affect a wide suite of species and these are listed below.

- pressures on migrants during migration or in winter
- climate change on the breeding grounds
- reduction of invertebrates
- impacts of land use on woodland edges and on habitats outside woodland
- reduced management of lowland woodland
- intensified habitat modification by deer
- changing predation pressure (especially by Grey Squirrels, corvids and Great Spotted Woodpecker)

In table 3, we have summarised the strongest hypotheses explaining the declines of 15 woodland species of particular conservation concern. The effects on birds of decreasing woodland management and intensifying deer pressure are certainly high-priority research areas, as they potentially affect nearly half the species listed in table 3. However, three of the above 'key hypotheses' could potentially affect *all* 15 species: reduced invertebrate food supplies, climate change on the breeding grounds and enhanced predation pressure, though we have singled out predation as particularly relevant in the case of Capercaillie, Lesser Spotted Woodpecker, Willow Tit and Hawfinch. A far better understanding of factors affecting the supply of invertebrates within woodland is needed in relation to climate change, woodland management and surrounding land management. Several other important hypotheses have also emerged which are specific to certain species. Species-specific programmes of work would seem most appropriate in these instances, e.g. Woodcock (recreational disturbance), Tree Pipit and Lesser Redpoll (forest age structure), Willow Tit (interspecific competition for nest-sites) and Bullfinch (hedgerow and woodland-edge structure).

While the other hypotheses considered in this paper do not emerge as such strong contenders for explaining the recent declines of

Table 3. Summary of likely causes of population declines in woodland and scrub species in Britain. The strongest current hypotheses are stated in blue type. Species listed are ones for which the woodland CBC has measured declines of >25% over the period 1966-2000, or ones for which other sources of evidence exist for national declines (see text).

Capercaillie *Tetrao urogallus* Collisions with deer fences. Nest predation. Changes in weather patterns. Both low breeding success and high mortality of fully grown birds are implicated in the decline (see references in Summers *et al.* 2004). The former appears to be a consequence of changing patterns of spring temperature and increasingly wet summers, coupled with high nest-predation rates. High mortality is caused by collisions with deer fences (Summers 1998).

Woodcock *Scolopax rusticola* No strong hypothesis. Possible factors could include recreational disturbance (especially perhaps from dogs), modification of the field layer by deer and increasingly dry conditions within some woods as a result of climate change and surrounding land management.

Lesser Spotted Woodpecker *Dendrocopos minor* Interactions with Great Spotted Woodpeckers. Changes in dead wood and dead-wood invertebrates. This woodpecker depends critically on invertebrates in small-diameter dead wood and it is possible that subtle changes may have occurred in this resource. Great Spotted Woodpeckers have been observed usurping Lesser Spotted nesting cavities (K.W. Smith pers. obs.) and are also nest predators. Competition between these species has been suggested to occur in Sweden (Nilsson *et al.* 1992). Large home ranges suggest that landscape-scale changes in tree abundance may be important.

Tree Pipit *Anthus trivialis* Changes in age structure of forests and woodland. Reduction in management in lowland woods. The overall extent of the population decline is not clear given the limited representativeness of the CBC index in the north. Habitat availability in the south may be an issue due to: (a) reduction in the planting of conifers and hence reduction in extent of suitable young growth, and (b) the trend towards less management in many woods, with consequent canopy closure.

Dunnock *Prunella modularis* Changes in the woodland understorey. Canopy closure in the absence of woodland management and increased browsing pressure from deer are likely to have reduced habitat quality for the species in many lowland woods.

Common Nightingale *Luscinia megarhynchos* Pressures on migration and in the winter range. Changes in habitat quantity and quality in the breeding areas. Habitat quality has declined locally as a consequence of succession, canopy closure and deer browsing (Fuller *et al.* 1999).

Song Thrush *Turdus merula* Drainage of damp areas outside woodland. Drying out of woodland. Changing understorey structure within woodland. The decline appears to be driven by reduced survival of birds in their first winter and possibly in the post-fledging period (Robinson *et al.* 2004). Lack of invertebrate food on farmland as a result of drainage is important (Peach *et al.* 2004), but dryness within woods may also be relevant. Canopy closure and deer browsing are likely to affect the quality of woodland understorey vegetation for nesting.

Lesser Whitethroat *Sylvia curruca* Pressures during migration and in the winter range. The Lesser Whitethroat has been little studied in Britain. Locally, loss of tall thick hedgerows and reduction in suitable scrub habitats, especially through successional change, may have been important. Habitat changes within woodland are unlikely to be important as the species seldom uses true woodland habitats, even coppice.

Willow Warbler *Phylloscopus trochilus* Pressures during migration and in the winter range. Reduction in habitat quality on the breeding grounds. Survival rates were reduced in the period of decline and there has been a moderate increase in the rate of nest failures (Peach *et al.* 1995a). Two factors likely to be at least of local significance in southern Britain are (1) successional changes in scrub habitats, and (2) deterioration in availability and quality of young-growth woodland habitats as a consequence of reduced woodland management and deer browsing.

Spotted Flycatcher *Muscicapa striata* Pressures during migration and in the winter range. Reduction in invertebrate food supplies, particularly large flying insects. Breeding performance has not declined over the last two decades but first-year survival has (Freeman & Crick 2003). This may be the result of changes in conditions outside Britain, or a consequence of deteriorating habitat conditions and food availability during the post-fledging period in Britain, or both. Spotted Flycatchers have declined in other European countries, suggesting a mechanism operating outside Europe (Tucker & Heath 1994).

Marsh Tit *Parus palustris* Reduction in structural and floristic diversity. For year-round feeding, a diversity of seed-bearing trees and shrubs appears to be important to this species, as well as areas of well-developed undergrowth. Habitat quality is likely to have been adversely affected by both reduction in broadleaved woodland management and increasing pressure from deer.

Table 3. Summary of likely causes of population declines in woodland and scrub species in Britain. *contd.*

Willow Tit *Parus montanus* Competition with other tit species. Predation by Great Spotted Woodpeckers. Changes in quality of woodland feeding habitat. Great and Blue Tits have been recorded usurping nest cavities from Willow Tits (Maxwell 2003). Nesting Willow Tits may be especially vulnerable to woodpecker attack because nests are typically excavated in soft wood. Changing woodland habitats, arising through increased canopy closure and intensified deer browsing, may be reducing food supplies.

Lesser Redpoll *Carduelis cabaret* Changes in age structure of forests and woodland. In southern Britain, reduction in the planting of conifers and hence reduction in extent of suitable young growth may be important. In the north, however, the extent of population change is unclear because the CBC index is not representative of habitats there. There is some evidence that survival was reduced during periods of population decline (Siriwardena *et al.* 1998).

Bullfinch *Pyrrhula pyrrhula* No strong hypothesis. Causes of decline in the Bullfinch are not understood. However, the most likely explanation relates to reduction in habitat quality, possibly at the woodland edge, or more widely in the surrounding landscape. Reduction in woodland management, leading to canopy closure, and increased pressure from deer may have caused a reduction in food supplies through loss of plant diversity and reduction of the understorey.

Hawfinch *Coccothraustes coccothraustes* Nest predation. There is little hard evidence, but increased nest predation by Grey Squirrels *Sciurus carolinensis* and corvids seems a likely cause of the decline. Little is known about changes in availability of large seeds which form the principal food supply of the species both within woods and in the wider landscape.

woodland species, there is demonstrably a need to understand more about several of these issues in the context of British woodland birds. The importance of different tree species in the ecology of woodland birds, the ecological effects of intensive Pheasant rearing and exactly how bird species use dead and decaying wood are all topics that would benefit from scrutiny. The exclusion of habitat fragmentation and habitat loss from the priority list of hypotheses should not be taken as a general indication that these are unimportant conservation issues; this merely reflects our contention that these issues are relatively unimportant in explaining recent declines in woodland birds in Britain.

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The *BB*/BTO Best Bird Book of the Year 2004

British Birds and the British Trust for Ornithology announce the winner of the Award for BEST BIRD BOOK OF THE YEAR. All books reviewed in *British Birds* or the BTO publications *BTO News* and *Bird Study* during the year 2004 were eligible for consideration for this Award.

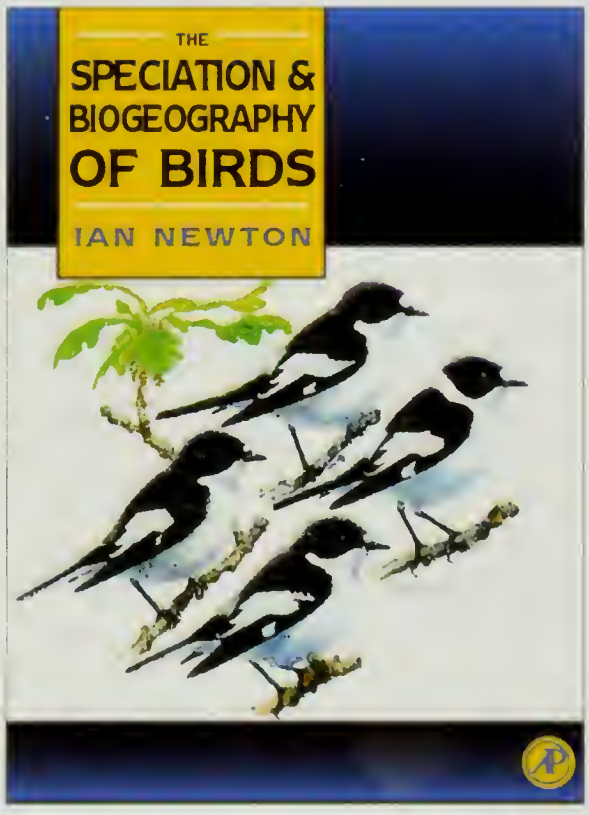


Excluding CDs, DVDs, and other titles that were clearly not 'bird books', an exceptional crop of 80 books were eligible for this year's competition. Each of the six judges began, as usual, by compiling a ranked shortlist of their six favourite titles, taking into account the reviews published by *BB* and BTO during the year. We employ no formal criteria for judging, but are looking for special merit in books that we believe will appeal to the readership of *BB* and *BTO News*. Seventeen books made it to the combined shortlist, a high total that reflects both the breadth of interest represented on the judging panel and the difficulty of selecting just six from the variety of high-quality books that appeared during the year.

The judges met at Swanwick, Derbyshire, in December, just prior to the BTO's annual conference. After further detailed inspection of the shortlisted books, and much discussion and debate, we decided upon a clear winner and two runners-up.

WINNER: The Speciation and Biogeography of Birds

By Ian Newton. Academic Press, London & San Diego, 2003 (see Brit. Birds *97: 149).*

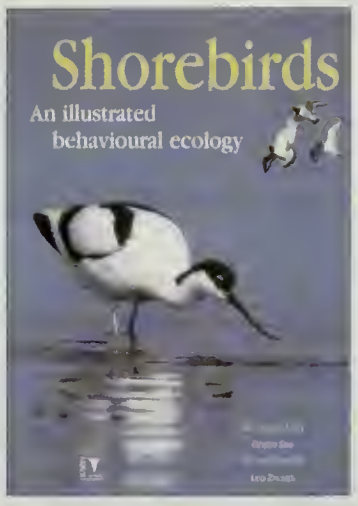


We settled quickly on this as our winning book. While ostensibly a book for students and post-graduate academics, it covers a subject so close to the heart of the average birdwatcher as to be of very wide appeal, and is written in Ian's easily accessible style. Illustrations are abundant and exceptionally clear, and Keith Brockie's wonderful artwork enhances the cover and the chapter headings. The publishers have set exemplary high standards in presentation and copy-editing. As the *BB* reviewer put it, this book is a 'tour de force'. Ian becomes the first double-winner as a solo author: his *Population Ecology of Raptors* (T. & A. D. Poyser, Berkhamsted, 1979) was the first-ever *BB* Best Bird Book (*Brit. Birds* 73: 436).

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2nd: Shorebirds: an illustrated behavioural ecology

By Jan van de Kam, Bruno Ens, Theunis Piersma and Leo Zwarts. KNNV Publishers, Utrecht, 2004 (see Brit. Birds *97: 668-669).*



First published in 1999 as *Ecologische atlas van de Nederlandse wadvogels*, this book is now revised and updated, and translated into English. It concentrates on the waders and other estuary birds of the East Atlantic Flyway, and the Waddenzee in particular, presenting an overview of these birds and how they interact with their environment throughout the seasons. The science is first-class and is presented in an easily digestible form, even if sometimes in language that betrays the book's origins. The whole is lavishly illustrated with clear diagrams and by hundreds of stunning and brilliantly presented photographs, which it is astonishing to realise are all the work of one man – the book's first-named author. We feel that both photos and text are worthy of very wide appreciation among British readers: after all, these are very much 'our' shorebirds, too.

3rd: The Birds of Shetland

By Mike Pennington, Kevin Osborn, Paul Harvey, Roger Riddington, Dave Okill, Pete Ellis and Martin Heubeck. Christopher Helm/A&C Black, London, 2004 (see Brit. Birds *97: 358-359).*

Because of Shetland's isolated geographical position in Europe, its avifauna is of special interest far beyond the local context. It is therefore pleasing to see a thorough and authoritative new work, compiled by a 'dream team' of Shetland bird experts. The accounts, even for apparently mundane species such as Magpie *Pica pica* and Bullfinch *Pyrrhula pyrrhula*, take on a special significance, giving new insights into the movements of birds across wide stretches of open sea. Though lacking distribution maps, the book is well written and presented. We especially liked the emphasis on people involved in Shetland ornithology, in Mike Pennington's introductory chapter and throughout the species accounts.

4th equal: Seabird Populations of Britain and Ireland

By P. Ian Mitchell, Stephen F. Newton, Norman Ratcliffe and Timothy E. Dunn. T. & A. D. Poyser/A&C Black, London, 2004 (see Brit. Birds *97: 669).*

4th equal: The Birds of Morocco: an annotated checklist

By Michel Thévenot, Rae Vernon and Patrick Bergier. British Ornithologists' Union and British Ornithologists' Club, Tring, 2003 (see Brit. Birds *97: 49).*

4th equal: Beguiled by Birds

By Ian Wallace. Christopher Helm/A&C Black, London, 2004 (see Brit. Birds *98: 48).*

These three books are all outstanding, but for completely different reasons. We saw little benefit in trying to rank them, each having strong proponents among the judges. The first is essentially the results of a survey, albeit an extraordinary one, in which birds were counted in all the remotest corners of Britain and Ireland. The 17 species-text authors have each brought new insights and, using their considerable professional expertise, have set the results in a broad context. *Birds of Morocco* documents the huge advances made in the study of the Moroccan avifauna in recent decades, and provides another important milestone in African and West Palearctic ornithology. Also judged fourth in the competition, Ian Wallace's book is a gem! It records much of the development of birdwatching in Britain, with, as might be expected from one of the most forthright and idiosyncratic characters on the birding scene, some irreverent digs at elements of the ornithological 'establishment'. There are many historic photographs, and further illustration is provided by Ian's inimitable paintings.

Our top rankings only became clear once we had discussed our approach to two further bird books – *Birds of Africa* Vol. VII (Christopher Helm, London, 2004), and *Handbook of the Birds of the World* Vol. 8 (Lynx Edicions, Barcelona, 2003) – which all the judges agreed were of supreme importance this year. Either volume could easily have won this year's competition. Attempting to rank multi-volume, multi-author works of this calibre alongside books of much more limited scope is full of problems, however, and potentially invidious, and so we opted this year to pay them homage outside the main rankings. The new volume of *Birds of Africa* brings this extraordinary series to a triumphant conclusion. The editors and the many authors of this series are to be warmly congratulated on their remarkable achievement. Volumes 1 and 7 of *HBW* have won this competition in previous years (1993 and 2002). The eighth volume impeccably maintains the series' exceptionally high standards. These are clearly books that should be frequent reference for all outward-looking birdwatchers, and whose purchase gives exceptional value for money.

Three further books caught our eye. *Drawing Birds* by John Busby (Christopher Helm, London, 2004) is a fully revised second edition and, essentially, a new book. It offers valuable guidance to budding bird artists, and presents many superb examples of widely varied drawing styles. James McCallum's *North Norfolk Summer Sketchbook* (Silver Brant, Wells-next-the-Sea, 2003) has attracted glowing reviews and warrants a further mention here as one of the highlights of the year's books. Finally, *Saving Asia's Threatened Birds* (BirdLife International, Cambridge, 2003) also deserves wide attention. It gives easily accessible information on Asia's threatened birds and habitats, from tundra to tropics, on what is at risk and how it may be helped.

John Marchant (BTO), Richard Chandler (BB)*, Andrew Gosler (BTO), Peter Hearn (BTO), Robin Prytherch* (BB) *and Bob Scott* (BB)
c/o BTO, The Nunnery, Thetford, Norfolk IP24 2PU

Announcement

Bird Photograph of the Year 2005

Photographers are reminded that the closing date for entries for this year's Bird Photograph of the Year competition is 30th April 2005. For full details of the rules (essential for those who wish to submit digital photos) and this year's sponsorship visit our website (www.britishbirds.co.uk), or write to *British Birds* (BPY), The Banks, Mountfield, Robertsbridge, East Sussex TN32 5JY, enclosing a stamped, self-addressed envelope. This year, prizes for the winners include the award-winning Sprayway Commanche GORE-TEX jacket, travel wear from Craghoppers, and books of the winners' choice from HarperCollins and A&C Black, as well as the traditional silver salver for the overall winner. An engraved goblet and £100 will be presented by The Eric Hosking Trust for the highest-placed photograph submitted by an entrant aged 25 or under.

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PhotoSpot

The gape-line of Steppe Eagle

A widely accepted identification feature of Steppe Eagle *Aquila nipalensis* is that the gape-line extends to a point level with, or even beyond, the rear edge of the eye (e.g. Cramp & Simmons 1980, Brown *et al.* 1982, Newman 1984, Porter *et al.* 1996, Beaman & Madge 1998, Svensson *et al.* 1999, Robson 2000, Ferguson-Lees & Christie 2001). In particular, this long gape-line is proffered as a useful field character to distinguish Steppe Eagle from Tawny Eagle *A. rapax* and, in fact, is unique among the *Aquila* eagles (Cramp 1980; Porter *et al.* 1996). A typical reference in descriptions of Steppe Eagle suggests that 'adults are large, dark brown eagles with prominent, orange-yellow gapes which extend back to a point level with the back of the eyes...' (Newman 1984). Both Sinclair *et al.* (1993) and Ferguson-Lees & Christie (2001) included an illustration comparing the relative length of the gape-line of Steppe and Tawny Eagles. The feature is not, however, universally recognised. Forsman (1999) was more circumspect, and stated that 'the gape is fleshy and yellow and reaches the centre of the eye or even beyond it'. Moreover, Sinclair *et al.* (1993) differentiated between the two races of Steppe Eagle: 'the yellow gape is long and extends behind the eye in the race *A. n. nipalensis*, whereas the gape of the race *A. n. orientalis* extends behind the middle of the eye, but not to the back of the eye'. Shirihai (1996) corroborated this analysis of the length of the gape-lines of the two races.

The form *A. n. orientalis* winters in Arabia (Snow & Perrins 1998) and is an abundant passage migrant and winter visitor to the Sultanate of Oman, where it gathers at several rubbish dumps in impressive concentrations, including up to 200 at Sunub tip on the outskirts of Muscat (Eriksen *et al.* 2003). In November 2003, I visited the Sunub tip and photographed several different Steppe Eagles,



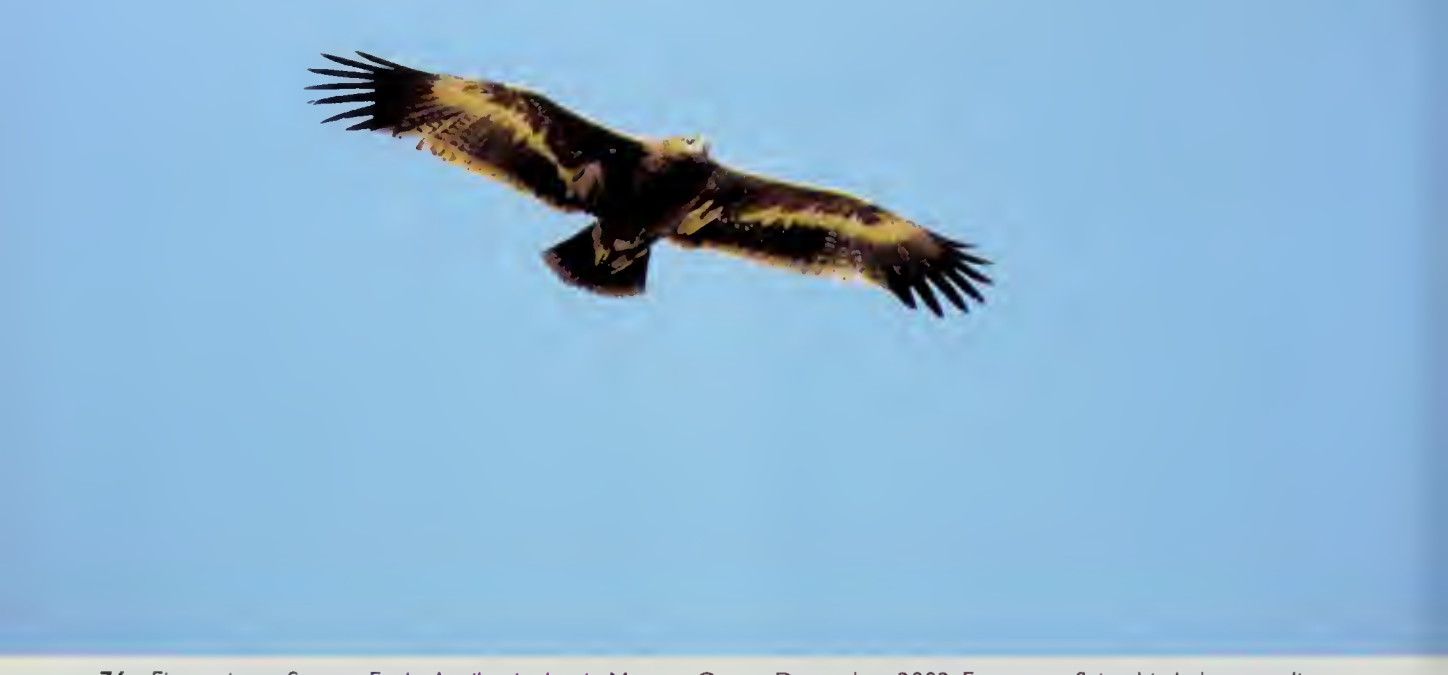
Ray Tipper

74. First-winter Steppe Eagle *Aquila nipalensis*, Muscat, Oman, November 2003. The gape-line of this individual extends only as far as the centre of the eye, contrary to most published accounts.



Ray Tipper

75. First-winter Steppe Eagle *Aquila nipalensis*, Muscat, Oman, November 2003. The same individual as in plate 74. Viewed directly head-on, the gape-line appears longer and might easily be perceived as reaching the rear of the eye.



76. First-winter Steppe Eagle *Aquila nipalensis*, Muscat, Oman, December 2002. Even on a flying bird, the gape-line is prominent and easily seen. *Ray Tipper*

including the first-winter depicted in plates 74 & 75. As plate 74 shows clearly, the gape-line of this particular individual stretched only to the middle of the eye. In the field, the gape of Steppe Eagle is prominent and eye-catching. It can be obvious on comparatively distant birds, even on those in flight (plate 76), especially if the light is good, and this may help to create an impression that it is longer than it really is. Whereas the gape remains conspicuous, whatever the angle of view, its length relative to the eye is far more difficult to determine. Only when an eagle's head is precisely in profile is it possible to be sure of the exact length of the gape relative to the eye (compare plates 74 & 75 and 77 & 78).

Whereas an *Aquila* eagle with a gape-line extending to the rear of the eye can be identified with confidence as a Steppe, it is clearly not possible to exclude Steppe Eagle in the identification process if the gape-line reaches only to the mid-point of the eye, and this is contrary to most published information. It is, perhaps, worth drawing attention to another useful detail on Steppe Eagle which is difficult to observe in the field and which the photographs accompanying this note illustrate well, namely the oval shape of the nostrils (these are round on Spotted *A. clanga* and Lesser Spotted Eagles *A. pomarina*).

Acknowledgments

I wish to thank Dick Forsman for reviewing a draft of this note and offering his support of its substance. Karen Phillipps, Ken Searle and Mike Wilson all kindly provided, assisted with, or checked references. Hanne and Jens Eriksen introduced me to the *Aquila* eagles of the Sultanate of Oman and I shared with them many memorable hours watching and attempting to photograph them.

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Ray Tipper

77. First-winter Steppe Eagle *Aquila nipalensis*, Muscat, Oman, November 2003. Although the head is in profile on this panting individual, the fact that the bill is open makes the length of the gape difficult to assess; it appears to extend beyond the centre yet not to reach the rear of the eye.



78. First-winter Steppe Eagle *Aquila nipalensis*, Muscat, Oman, November 2003. The same individual as in plate 77. With its head turned only slightly, the gape-line appears longer, seemingly reaching close to the rear of the eye. *Ray Tipper*

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79. Tawny Eagle *Aquila rapax*, Nairobi, Kenya, March 1992. The gape-line extends to a point level with the centre of the eye (comparable with the Steppe Eagle *Aquila nipalensis* in plate 74), but the pale gape is far less prominent than the richer yellow gape of that species. *Ray Tipper*



BRITISH ORNITHOLOGISTS' UNION

BOU News

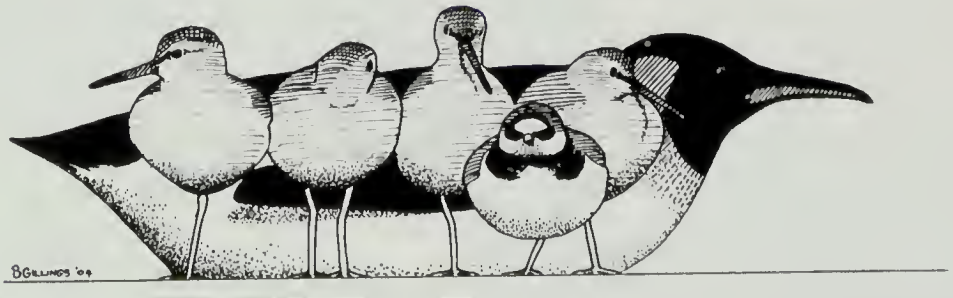
Climate Change and Coastal Birds

Should birders and naturalists care about climate change? Here are a few key facts:

- Almost all specialists believe that the 0.6°C warming of the earth's average temperature and the 10-20 cm increase in global sea levels over the last century is due to the burning of fossil fuels.
- Further average warming of between 1.4° and 5.8°C is predicted for the present century. To place these temperature increases into context, the temperature in Britain has increased by only some 5°C since the last ice age.
- The growing season of plants advanced in northern latitudes by 11 days between the mid 1960s and mid 1990s.
- The European distributions of 22 non-migratory butterflies shifted to the north by 35-240 km during the twentieth century.
- Over a 25-year period, Common *Bufo bufo* and Natterjack Toads *B. calamita* have started breeding earlier by 2-3 weeks in Britain.
- Recent predictions suggest that up to one-third of all animal species could become extinct by the end of the present century.

Similar climate-related changes are affecting birds. Twenty species of bird in the UK are breeding earlier by an average of nine days. The distribution of southerly species in Britain extended northwards by an average of 19 km between 1968 and 1991. The distributions of the internationally important populations of waterbird that overwinter in the UK are shifting both eastwards along the winter isotherms and northwards towards their breeding grounds. These changes mean that some sites designated as being important for waterbird conservation hold fewer birds. Many more examples could be listed here, but the message is clear: Not only is there sound evidence that climate change is happening, but also that it is affecting the distributions of species on a large scale. Birders will have noted that migrants are arriving in the UK earlier in spring and staying later in the autumn, and that there has been an increase in the records of species that, 50 years ago, were rare or unknown in Britain, for example Little Egret *Egretta garzetta*, Black Kite *Milvus migrans*, Cetti's *Cettia cetti*, Dartford *Sylvia undata* and Sardinian Warbler *S. melanocephala*.

The published papers from the BOU's 'Climate Change and Coastal Birds' conference cover issues that relate most directly to coastal birds but that are also of importance to you. They deal with subjects such as how climate will change over the coming decades and how it is probably already too late to stop sea levels continuing to rise for over 50 years, even if the use of fossil fuel was reduced radically; how rising sea levels will change the shape of the coasts and estuaries, and affect the coastal plants and invertebrates that birds depend on; how the timing of arrival and distributions of birds are already changing; how conservation legislation may have



Simon Gillings

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to be adapted to deal with climate change; and how the artificial creation of habitats can help to compensate for climate-change-induced habitat loss. The final paper in the supplement is a stimulating discussion which covers the many questions that remain to be answered if we are to minimise a potentially catastrophic loss of species owing to human-induced warming of the planet. These include such basic questions as: *How* will the climate change? How will the physical environment and vegetation change? How can we better predict what will happen to bird populations? How important are extreme events, such as storms, which are expected to increase in frequency? How can we deal with the great complexity of the environment and interactions among species? How will non-native species respond? Will species adapt fast enough? What is the effectiveness of current coastal conservation measures? Some of the main policy responses raised at the meeting were to adopt long-term plans; to reduce other stresses; to reconsider the status quo; to create habitats; to change public perceptions towards natural ecosystems; to take potential problems associated with non-native species more seriously; to convince policy makers of the scientific realities; and to consider the establishment of a panel on biodiversity change.

If you are in your 20s or 30s, major changes will occur in your lifetime. They will affect the birds, plants and insects that you see, your local weather, and indeed the amount of tax that you will have to pay as Britain has to protect itself from rising sea levels. Cheer yourself up with the thought that southerly species previously unknown to these shores are increasingly likely to turn up in Britain. Hoopoe Lark anyone?

Rehfisch, M. M., Feare, C. J., Jones, N. V., & Spray, C. 2004. Climate change and coastal birds. *Ibis* 146 (Supplement 1): 1-124. *

Mark Rehfisch, Chris Feare, Neville Jones and Chris Spray

Ecology and Conservation of Lowland Farmland Birds II: the road to recovery

The dramatic population decline of many bird species associated with lowland farmland is widely recognised as one of the most important conservation issues in Britain, and indeed elsewhere in Europe. The 'Ecology and Conservation of Lowland Farmland Birds' was the theme of the BOU conference in spring 1999, and it drew together a wealth of information on the status and causes of decline for a wide range of farmland bird species (Aebischer *et al.* 2000). Since that time, there has been a remarkable advance in the breadth and depth of farmland bird research. The emphasis has shifted from diagnosing the causes of population declines to research aimed at developing practical solutions to stem and ultimately reverse them. These developments have been accompanied by rapid changes in policy. In 1999, a composite index of the breeding-abundance trends of 19 farmland bird species was adopted by the Government as part of the 'wild bird populations' UK sustainability indicator – one of only 15 headline indicators selected to assess progress with the Government's sustainable development strategy and to provide a measure of whether people in the UK are experiencing a better quality of life (Anon. 1999). In 2000, the then Ministry of Agriculture, Fisheries and Food adopted an undertaking to reverse the decline in farmland birds by 2020 as one of its 'Public Service Agreement' (PSA) targets, which has now passed on to its successor body, the Department for Environment, Food & Rural Affairs (Defra). This target has raised the profile of farmland bird conservation and led to an extremely effective working partnership between government bodies, statutory agencies and non-government organisations. Reversing the decline of farmland birds is viewed by the Government as a measurable surrogate for the success of its policies which seek to conserve wildlife in general in the English countryside.

Reflecting this wealth of new research, as well as the changes in policy and practice, the theme of the spring 2004 BOU conference was 'Ecology and Conservation of Lowland Farmland Birds II: the road to recovery'. The conference proceedings have now been published (see below), and they highlight how detailed scientific understanding of the causes of the declines has been translated into the development and testing of solutions to aid species' recovery. The

supplement includes new information about species such as Northern Lapwing *Vanellus vanellus*, Song Thrush *Turdus philomelos*, Tree Sparrow *Passer montanus* and Reed Bunting *Emberiza schoeniclus* – for which a common theme was the need for small-scale wetlands as a source of aquatic and soil-dwelling invertebrates – and quantification of management requirements to achieve recovery for well-studied species such as Grey Partridge *Perdix perdix*. Several papers describe advances in our understanding of the ways in which changes in grassland management have affected passerines; grassland habitats have received less attention than arable ones, despite the fact that many of the most severe losses of farmland birds have been in pastoral-dominated regions. The majority of papers focus on testing and developing solutions for species recovery. These cover research assessing the potential benefits of management practices, such as the planting of seed-bearing crops as overwinter food, which are currently deployed or being tested as options under agri-environment schemes and on set-aside. Other papers cover the experimental provision of bird resources such as undrilled crop patches, non-inversion tillage, grass sward management and artificial food provision in winter. The papers reflect the drive towards achieving species recovery at both the scientific and political levels. This is also the theme of the final papers in the supplement, which consider how this wealth of scientific evidence can be, and is being, translated into policy and practice and the wider potential benefits of managing the farmed landscape for biodiversity.

Ian Newton reviewed what is now known about the ecological requirements and causes of population declines of farmland birds (published as a companion paper to the proceedings in *Ibis*). He made it clear that there is now sufficient understanding to develop practical solutions for the recovery of many species, and the conference papers illustrate that we are a long way down the road of not just development but also implementation. Careful appraisal and ongoing monitoring provide the means of assessing the consequences of applying these conservation actions. The BOU hopes that this conference, and the speed at which the proceedings have been published, will contribute in a valuable and timely way to restoring the fortunes of the bird species that are so much part of the British countryside.

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Juliet Vickery, Andy Evans, Phil Grice, Nicholas Aebischer and Richard Brand-Hardy

* The *Climate Change and Coastal Birds* proceedings can be viewed for free via http://www.bou.org.uk/pubibis.html

** *Lowland Farmland Birds II: the road to recovery* is available online from http://www.ibis.ac.uk or in print format from Blackwell Publishing; tel. 01865 778315, and quote the full journal reference.

*** Available on CD from BOU.

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Letters

Honey-buzzards in Britain

Recent letters to *British Birds* question whether there has, in fact, been a real increase in breeding Honey-buzzards *Pernis apivorus* in Britain (Wiseman 2004), and suggest that the present population is 'not certainly more than 30-50 pairs' (Mummery *et al.* 2004). Over the past 20 years, I have watched breeding Honey-buzzards at more than 30 locations in England, Scotland and Wales, and have discussed their present and past status with fieldworkers in the relevant areas.

In any discussion of population numbers, for any species, it is important to establish just what 'accounting unit' is being used. Obviously, there are likely to be more territorial pairs in a population than there are successful breeding pairs, especially for a large raptor such as the Honey-buzzard. Contrary to the quoted experience of Mummery *et al.* in the New Forest, Hampshire, a significant proportion of birds present at most British Honey-buzzard sites are non-breeders. Several long-term studies in The Netherlands have found that less than 50% of resident Honey-buzzards were engaged in a breeding attempt in any one year (van Manen 2000; Voskamp 2000; Bijlsma 2004). This high proportion of non-breeders is mirrored in studies of Honey-buzzards in several other European countries (R. Bijlsma pers. comm.). In fact, many of the observations in the letter from Mummery *et al.* are either at odds with experience in other parts of Britain (e.g. Irons 1980, Roberts *et al.* 1999), and much published data from other parts of Europe, or are simply not provable. Although the British Honey-buzzard population is insignificant in terms of the European population, its position on the western edge of the species' range means that any studies of breeding behaviour are of great interest to Honey-buzzard workers throughout the region. Unfortunately, since the data collected by Mummery *et al.* have not been published, there is no indication of the methodology used in their research. E. J. Wiseman's letter confirms that the figures for the New Forest during 1954-2002 include pairs which summered but did not attempt to breed. I use the term 'territorial pairs' for my population estimate, since it covers both successful breeding pairs and unsuccessful paired birds that are present throughout the breeding season; the latter group includes birds which do not necessarily attempt to breed, as well as those which fail early and do not make a second attempt, and which may appear to be non-breeders.

How many territorial pairs of Honey-buzzards are there in Britain? The attempted national survey in 2000, and a greater spirit of openness among some observers, has led to the Rare Breeding Birds Panel figure reaching the unprecedented heights of 30-51 pairs in 2000 (Ogilvie *et al.* 2002). I am certain that there are many more pairs which go unrecorded each year, most of them in the more remote parts of western and northern Britain. On several occasions in recent years, I have found breeding Honey-buzzards in upland locations and been told, on reporting them to the relevant authorities, that birds had been seen in that location 10, 20 or more years ago, but that no-one had subsequently visited to check on progress. The people who know of these locations, typically professional staff working for conservation organisations, often simply do not have the time in a busy working schedule to visit more than a small fraction of such sites each year. Even in southern England, some breeding pairs are known to only a handful of raptor-workers, and some pairs are probably unknown even to them. From the information given to me by fieldworkers in many parts of Britain, there are at least 60 sites where Honey-buzzards have certainly bred in the past 30 years (some of which may not currently be occupied). In addition, there are around 30 sites where Honey-buzzards have been present in that period but where breeding has not been proven. Add in an unknown number of as yet undiscovered or unreported sites, and an estimate of 100 or more territorial pairs of Honey-buzzards in Britain each year seems reasonable. Mummery *et al.* are obviously entitled to their view that the population is considerably lower, but they do not explain why the opinions of local fieldworkers with many years' experience of the species should be ignored.

Has there been a real increase in the British Honey-buzzard population? There are obvious difficulties in proving what was or was not



Steve Roberts

80 & 81. Honey-buzzard *Pernis apivorus* nest-sites in southern England, 2004 (see text).

present 30 or more years ago, especially since so little data were published until recently. The Rare Breeding Birds Panel figures in the early 1970s reflected the reluctance of many observers to provide records for this species. As Wiseman and Mummery *et al.* suggest, there certainly were breeding Honey-buzzards in mature conifer plantations in the early 1970s. Nonetheless, the lack of records from areas such as Wales and Cumbria, where significant breeding numbers are now present, suggests a more recent colonisation in some areas. In addition, some Honey-buzzard pairs now nest in plantations that were still providing habitat for Short-eared Owls *Asio flammeus* in the 1960s and 70s! It does not seem unreasonable to claim that modern upland forestry, with its mosaic of mature timber, clear-fells and restocks, provides both better feeding and better breeding habitat for Honey-buzzards than the even-aged conifer blocks of an earlier period, and that the total population has in consequence grown.

Finally, Mummery *at al.* sug-



Phil Everitt

gested that a limiting factor in British Honey-buzzards is their reluctance to use nest-sites such as isolated copses and single trees. Plates 80 & 81, showing one nest-site in a small group of deciduous trees, and another nest in a hedgerow tree by a busy road, both taken recently in an English county, show that not all British Honey-buzzards are so inhibited. Roberts & Lewis (2003) clearly pointed out that such sites were being occupied in Britain; it is puzzling that Mummery *et al.* have chosen to ignore this as well.

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Pallid Harrier migration through the central Mediterranean

The map presented in our paper discussing the migration flyways of Pallid Harrier *Circus macrourus* across the central Mediterranean (*Brit. Birds* 97: 238-246) was not accurate in its fine detail, but was meant to illustrate the broad patterns by which the species moves north and south in spring and autumn. For example, there are many important spring flyways over a broad front in the Middle East, involving much higher numbers than those using central Mediterranean flyways, as a glance at a map of the species' main breeding and wintering areas would suggest. As Peter Flint subsequently pointed out (*Brit. Birds* 97: 477-478), Cyprus is an important migration flyway and stopover island for Pallid Harriers, but it was simply not part of the area for which we had detailed information. Cyprus is important not only in spring, as stated by Flint, but also in autumn (and probably to a higher degree than shown by available data, since there are fewer observers at that season than in spring). In autumn 2003, I spent three months in Cyprus monitoring illegal bird-trapping on behalf of BirdLife International and the RSPB; during this period, I observed several Pallid Harriers (around 30 in total), most of which were juveniles (unlike many experienced adults, juveniles often undertake long sea-crossings).

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Pectoral Sandpipers in Finland

In their (excellent) recent article on Pectoral Sandpipers *Calidris melanotos* in Europe (*Brit. Birds* 97: 638-646), A. C. Lees and J. J. Gilroy state that 'in Finland Pectoral Sandpiper is predominantly a spring vagrant (Lewington *et al.* 1991)'. This information is now somewhat out of date. If we consider all the accepted records of this species in Finland, some 68 individuals at the time of writing, the monthly distribution is as follows: April 5, May 17, June 9, July 13, August 6, September 16 and October 2.

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Notes

All Notes submitted to *British Birds* are subject to independent review, either by the Notes Panel or by the *BB* Editorial Board. Those considered appropriate for *BB* will be published either here or on our website (www.britishbirds.co.uk) subject to the availability of space.

Little Grebe swallowing small mammal

In early March 2003, I made the following observation at the S'Albufera Parc Natural, in Mallorca. I was photographing a Little Grebe *Tachybaptus ruficollis* and followed the bird through the camera lens as it disappeared into some reed. There followed some disturbance in the reeds, as though some sort of struggle was taking place. Eventually, the grebe reappeared and, to my amazement, I could see the hind legs and tail of a small mammal being swallowed head first.

I can find no mention of mammals included in the diet of this or any other species of grebe, and my observation appears to me to be unique.

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Cream-coloured Courser showing feeding attachment to desert roads

During a visit to south-central Tunisia in April 2004, I was interested to note an intriguing, persistent association between Cream-coloured Coursers *Cursorius cursor* and the tarmacked roads passing through their desert and steppe habitats. All of the 13 birds seen on 25th-26th April were found on the road or close to the roadside. By contrast, on numerous occasions, I stopped and scanned appropriate habitats away from the road, but never found them. The most compelling evidence for some underlying ecological attachment to roads came on 26th April, in an area of alkaline steppe around the oasis of Chebika, 55 km northwest of Tozeur. Here, we found an adult and two young c. 100 m from the road, then two adults close to a stretch of road on which there were two dead courser chicks, one probably hit that morning. Another pair of adults fed close to the roadside, one of which eventually began feeding on the tarmac until repeatedly flushed by a succession of vehicles, while a third corpse spotted later may well have been that of a Cream-coloured Courser.

In rural Pakistan, this species is often extremely tame and feeds in the vicinity of villages, where beetles are attracted to the dung of livestock (Roberts 1991). I infer that my observations reflect a recently acquired variation on this opportunistic behaviour and that the birds are finding grit and/or searching for road-killed insects and possibly other items like lizards. Beetles (Scarabaeidae) and species of Orthoptera are important prey items and I found that our radiator grill and engine housing were full of dead insects. Given that the desert roads are relatively traffic-free and other avian road-casualties infrequent, the incidence of several dead Cream-coloured Coursers was noteworthy in itself and may represent an important cause of juvenile-courser mortality.

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Acknowledgments

I would like to thank Jonathan Elphick and Martin Woodcock for help with a number of references.

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Exceptional numbers of Oriental Plovers in southern Siberia in 2003

The first record of Oriental Plover *Charadrius veredus* for the Western Palearctic, in Finland in May 2003, stimulated much discussion in the birdwatching press (e.g. Rannila 2003, Papps 2004), and speculation as to what might have caused an individual to be found so far west of the breeding grounds. My observations in southeast Transbaikalia, Russia, suggest that Oriental Plovers were moving much farther north and northwest of their normal breeding

range than usual in summer 2003. The Oriental Plover is accidental in Russia, having been reported only in the regions neighbouring Mongolia (Tuva, Buryatia, and Chita; Dement'ev & Gladkov 1951, Kozlova 1961). Before 2003, only one breeding record had been reported in Russia, in the Tuva Republic in 1968 (Golovushkin 1971).

During 3rd-8th June 2003, I visited the Chita region with a group of Dutch birders; this is an area chiefly of hilly steppe near large, brackish lakes (Zun- and Barun-Torey) on the border with Mongolia. Typically, Oriental Plovers are extremely rare there (Goroshko & Kiriliuk 2003) but, during our visit, a total of eight were observed. Furthermore, a pair found on 3rd June showed evidence of breeding behaviour – the male was flying around anxiously, while the female attempted to lead us away from the area – though, unfortunately, we could not locate a nest. Four more territorial males were registered in the following days in the steppe around the lakes, and two males thought to be migrating were seen on the shore of Lake Barun-Torey, with Red-necked Stints *Calidris ruficollis* and Broad-billed Sandpipers *Limicola falcinellus* on 4th June. In Tuva (Ubsunur basin), a nest with eggs was located and two more breeding attempts were reported that year (Ozerskaya 2004).

Spring and early summer in this part of Russia were extremely (and atypically) dry, with many steppe and forest fires. It is possible that conditions on the usual breeding grounds in eastern Mongolia and northern China were similarly harsh, or even worse, which forced birds to explore new breeding sites and precipitated the exceptional numbers on the Russian steppes.



Bjorn Anderson

82. Male Oriental Plover *Charadrius veredus*, near Dalandzadgad, Mongolia, June 2004.

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Footnote: The spelling 'Tuva' is retained in this note, but the name of the republic is now written 'Tyva'.

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Ruffs feeding on contents of a Giraffe's stomach

On 19th November 2003, at Etosha, Namibia, I was watching animal activity at a waterhole when I noticed a small party of 12 Ruffs *Philomachus pugnax* feeding close to the carcase of a long-dead Giraffe *Giraffa camelopardalis*, one that I estimated to have been dead for at least ten days. The Ruffs were feeding close to the bones and dry hide of the Giraffe carcase, as if taking advantage of some invertebrates (beetles or fly larvae?) living among the remains. During some 30-40 minutes' observation, the Ruffs particularly favoured a large brown patch of dead vegetation that lay in close proximity to the Giraffe's belly, and were clearly taking prey items from among this vegetation pile, some 150 cm high in places, rather than catching flies

on the surface. They did not pick at the Giraffe's hide, flesh or bones.

About one hour later, I saw vultures (Accipitridae) feeding on a recently dead Wildebeest *Connochaetes taurinus*. Three Warthogs *Phacochoerus africanus* sifted through an adjacent patch of piled dead vegetation and fed among it for at least 20 minutes. This patch was similar in colour and structure to that present at the Giraffe kill and I realised that it was the spilled contents from the dead animal's gut. Chris Hines, one of my companions and a Namibian biologist, confirmed that it was not unusual for other animals to feed on or among spilled gut contents arising from the death of a large animal.

Although *BWP* states that seeds form part of the Ruff's diet, the Giraffe's gut contents were unlikely to contain an abundant supply of seeds owing to the fact that acacia leaves form the staple of this mammal's diet, and the Ruffs were more likely to have been taking insects from the pile of gut contents. Ruffs are opportunistic feeders known to follow ploughs in search of invertebrates, and many birds take flies from animal droppings (*BWP*). The behaviour reported here, associated with large game animals, may have gone unnoticed by European birdwatchers and is not mentioned in *BWP*. I have seen other shorebirds such as Turnstone *Arenaria interpres* and Sanderling *Calidris alba* feeding on dead animals, fish and large crustaceans on the tideline, and also francolins *Francolinus* in Namibia pecking at large pieces of meat put out to bait Leopards *Panthera pardus*, so I would not have been surprised to see Ruffs picking at the flesh of a Giraffe carcase. These birds showed a deliberate interest and preference for feeding among the gut contents, however, as the Giraffe's flesh had long since been taken by other scavengers such as vultures and jackals *Canis*.

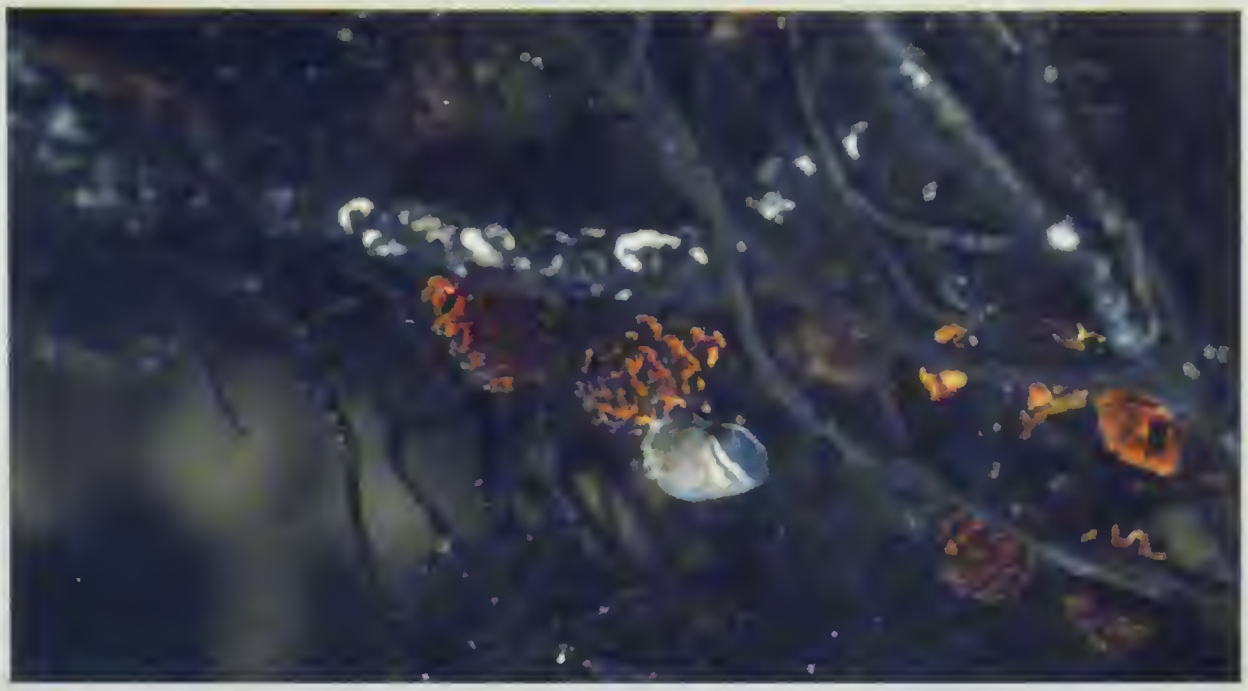
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Taking advantage of a crisis: the behaviour of Corsican Nuthatches after a wildfire

The diet of Corsican Nuthatches *Sitta whiteheadi* consists primarily of small invertebrates from spring to autumn, and the seeds of Corsican Pines *Pinus nigra laricio* var. *corsicana* from November to March, during the cone-opening period (Cramp & Perrins 1993; pers. obs.). In winter, the cones typically open on dry, hot days, allowing nuthatches to hoard the seeds which they will retrieve later, when cold, damp weather ensures that the cones remain closed. Here, we describe the behaviour of Corsican Nuthatches feeding on and hoarding the seeds of Corsican Pines in summer, after wildfire had induced the early opening of cones.

On 24th and 25th August 2003, following an exceptional heatwave, four trees were struck by lightning in the territorial forests of Melaja and Tartagine (Haute-Corse), triggering a fire that foresters and firemen were unable to control. The fire lasted for two weeks, burning 1,836 ha of woodland (approximately 54% of the forest cover). Owing to the heterogeneity of relief, substrate, and vegetation, the fire resulted in a large mosaic of charred, scorched, and undamaged areas. These forests were predominantly Corsican Pine, intermingled with Evergreen Oak *Quercus ilex* and Silver Birch *Betula pendula* in Supramediterranean and Montane vegetation zones respectively (Gamisans 1999).

We visited the Melaja forest on 7th September, in particular those sites identified as Corsican Nuthatch territories before the fire (Beck 1992). In two separate areas, both severely affected by the fire, at an altitude of 750 m and 870 m respectively, we watched several Corsican Nuthatches in burnt trees, foraging on cones and hoarding seeds under the bark of nearby trees. Along with Coal Tits *Parus ater*, the Corsican Nuthatches were foraging on open cones, scorched and brown-coloured, and consequently easy to distinguish from closed, unripe, greenish-brown ones. In one spot, with fallen branches still burning, a female Corsican Nuthatch, surrounded by small flames and a cloud of smoke, was seen picking seeds from the cones and hoarding them on burnt trunks (plates 83 & 84). Observations at this site the following autumn and winter showed that the nuthatches remained on their territories. The post-fire hoarding thus appeared to be a survival strategy in a disturbed environment where seeds remained the only available food (pers.



Pascal Villard

83. Opened by the heat of a ground fire, the cones of the Corsican Pine *Pinus nigra laricio* var. *corsicana* turn brown, while the extremities of their scales are scorched. This female Corsican Nuthatch *Sitta whiteheadi* extracted the seed, then proceeded to hoard it under the bark of a burnt tree some 40-50 m away. It repeated the same behaviour several times in quick succession.

obs.). Those areas in which the fire was at its greatest intensity, causing trees, foliage and cones to char, were, however, completely deserted by the Corsican Nuthatches.

Fire is a recurrent part of the landscape in Corsica, destroying several thousand hectares of maquis and forests each year, but its effects are being exacerbated locally by salvage logging, leading to an overall decrease in the Corsican Nuthatch's habitat (Thibault *et al.* 2002, in press).



Pascal Villard

84. General view of the site where the female Corsican Nuthatch *Sitta whiteheadi* (in plate 83) foraged and hoarded, Melaja forest, Corsica, September 2003. The trunk is broken, with branches still burning on the ground.

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Reviews

WOODPECKERS OF EUROPE: A STUDY OF THE EUROPEAN PICIDAE

By Gerard Gorman, illustrated by Szabolcs Kókay. Bruce Coleman Ltd, Chalfont St Peter, 2004. 192 pages, 10 colour plates, numerous line-drawings, colour distribution maps. ISBN 1-872842-05-4. Hardback, £35.00.

Europe's woodpeckers are an attractive bunch, and this portable and well-produced volume will increase your awareness of this frequently neglected group. Covering the continent's ten breeding species, and sensibly excluding vagrants such as Yellow-bellied Sapsucker *Sphyrapicus varius*, this book will appeal to anyone wanting an insight into the lives of these engaging, but sometimes elusive creatures. The book is divided into three parts, of which the first 'Systematics, structure and natural history' and last 'Woodpeckers and the wider world' provide brief but necessary contexts for the middle and longest section. This section contains the individual species accounts, preceded by a block of coloured plates and distribution maps.

Gerard Gorman is clearly a woodpecker enthusiast and, by deftly weaving various published and unpublished sources with his own opinions and eastern European experience, he has produced a text that is both interesting and informative. I was, for example, fascinated to learn that a Grey-headed Woodpecker *Picus canus* had been witnessed foraging on a limestone cliff face in a manner recalling Wallcreeper *Tichodroma muraria*. The individual species accounts cover not only expected themes such as plumages, habitat preferences, nest-sites, feeding habits and population trends, but also include helpful discussions on hybrids (a topic mostly neglected in ornithological literature), and signs. This last subject is of more use for certain species than it might at first appear, for, as Gorman notes, it was the distinctive foraging marks left by White-backed Woodpeckers *Dendrocopos leucotos* that led to a previously overlooked population being discovered on the borders of Austria and the Czech Republic in the 1990s.

The illustrations by Hungarian artist Szabolcs Kókay form an important part of this work. His skilfully crafted black-and-white line-drawings are scattered throughout the book, and are not only decorative but cleverly designed to illustrate points in the text, while the colour plates are simply some of the most lifelike and instructive woodpecker paintings available.

Criticisms? Well, yes, there are a few niggles, though the only one I feel serious enough to warrant mentioning concerns the maps, which as well as covering Europe (excluding woodpecker-free Iceland) extend beyond its boundaries to include adjacent parts of central Asia, the Middle East and North Africa. Here, I would have expected distributions to be shown for the entire area mapped, yet this is not the case. Without either prior knowledge or reference to individual species texts, there is nothing to indicate, for example, the presence of breeding populations of Great Spotted Woodpecker *D. major* in Morocco and Tunisia, or Syrian Woodpecker *D. syriacus* in Israel. Distributions are shown, however, for non-European Turkey but (bafflingly, as it is part of Europe) inconsistently so for the Caucasus region. Furthermore, comparison with *BWP Concise* reveals a number of other small discrepancies and suggests that the ranges are more crudely indicated than necessary, even allowing for the scale of map used; the much tinier 'thumbnails' in the *Collins Bird Guide* (Svensson *et al.* 1999) appear better in both those respects. As a former cartographer (of sorts), I suspect that the person who compiled the maps had little background in cartography, as these do not show the same attention to detail evident elsewhere in the book.

In spite of my doubts concerning the content and execution of the maps, I believe that anyone with an interest in European woodpeckers would do well to acquire this volume for its useful text and excellent illustrations. However, it should not be allowed to simply accumulate dust on the bookshelf; my copy will certainly see service on visits to woodpecker-rich parts of Europe.

Pete Combridge

INSECT AND BIRD INTERACTIONS

Edited by Helmut F. van Emden and Miriam Rothschild. Intercept Ltd, Andover, 2004. 301 pages; five colour plates; maps, figures, tables, line-drawings, black-and-white photographs. ISBN 1-898298-92-0. Hardback, £70.00.

This book, which grew out of a conference held in 1997, contains 20 papers that provide a wide-ranging overview of insect–bird interactions. The volume is divided into four subject sections, the first of which (Population Management Issues) devotes four of its six chapters to the important and topical subject of birds and their insect prey in agricultural environments. Three of these focus on the impact of agricultural change on farmland insect populations and, hence, on insectivorous farmland birds, while the fourth provides a useful review of techniques for assessing and identifying the invertebrates actually eaten by farmland birds. The

opening chapter, however, reviews how the availability and quality of intertidal invertebrate prey affect shorebird populations, with the aim of drawing out conclusions relevant to insect–bird interactions.

The second section reviews the 'Effects of Insecticides on Bird Populations', including the evidence for the indirect effect of changing farmland pesticide use on bird populations. Other chapters include a case study based upon the detrimental impact of household insecticides on the highly endangered Seychelles Magpie Robin *Copsychus sechellarum*, and a review of the consequences of organochlorine insecticide use for British raptors. Although the latter might seem well-known, there are intriguing insights into the relative impacts of DDT and of cyclodiene pesticides such as dieldrin, and why bird-eating raptors such as Eurasian Sparrowhawks *Accipiter nisus* suffered more than mammal-eating ones such as Common Kestrels *Falco tinnunculus*.

The third, and largest, section discusses 'Foraging Behaviour of Birds on Insects'. Two chapters are case studies, looking at Wrynecks *Jynx torquilla* and ants (Formicidae), and Great Tits *Parus major* and caterpillars respectively, two address factors influencing birds' use of aposematic prey, and two others tackle rather specialised aspects of the role of odours in affecting bird behaviour. The three chapters of the final section ('Ectofauna') comprise perhaps the most eclectic grouping, incorporating avian defences against ectoparasites, how young cuckoos (Cuculidae) acquire their host-specific feather lice, and the interactions between detritophagous insect larvae and birds. As the last-named points out, here lepidopteran caterpillars are the unexpected consumers, feeding on the waste products of birds, and the chapter includes an outline of the evolutionary pathways leading to this specialisation.

Overall, the book admirably fulfils, and even exceeds, the coverage promised by its title, containing much of interest to ornithologists and entomologists alike, whether amateur or professional. It is also nicely produced, and well it should be at the price, which is its main drawback. The publishers appear to have chosen a short print run/high profit margin route, aimed at academic libraries, which will keep this book away from many who might otherwise have enjoyed and learnt from it.

Robert Prŷs-Jones

WHERE TO WATCH BIRDS IN NORTHEAST ENGLAND

By Dave Britton and John Day. 2nd edition. Christopher Helm, A&C Black, London, 2004. 416 pages. ISBN 0-7136-6826-1. Paperback, £16.99.

First published in 1995, this guide contains comprehensive coverage of 75 sites in Northumberland, Tyne & Wear, Durham and Cleveland, with short notes on a further 81 locations. Northeast England – with the seabird spectacle of the Farne Islands, lekking Black Grouse *Tetrao tetrix* in Teesdale and the migrant hot-spots of Holy Island, Druridge Bay, Hartlepool and Teesmouth – offers some of the finest birding in the country.

One key site that has come to prominence since 1995 is East Chevington, in Northumberland, part of the network of five wetlands that stretch along Druridge Bay, so it is good to see this site given its own section. The inclusion of the newly created St Mary's Wetland, Whitley Bay, is also to be welcomed.

The authors have also looked to the future. The section on the North Tees Marshes (incorporating Saltholme Pools) spells out the exciting developments in this area, where the RSPB is developing an extensive reedbed, pools and wet grassland, and plans to open its first reserve in Northeast England in 2007 (*Brit. Birds* 97: 672).

The updated guide has better maps than the original and the access details are extremely precise; at random, I checked if the authors had noted the change of ownership at the hypermarket next to Wallsend Swallow Pond – they had. Northeast England is underwatched, yet consistently turns up some excellent birds. Anyone contemplating a trip to the region should buy this book. When that Fea's Petrel *Pterodroma feae* is lingering off Newbiggin, you'll want to know *exactly* where you're heading!

Adrian Pitches

ATTU: BIRDING ON THE EDGE: A QUARTER CENTURY OF BIRDING THE WESTERN REACHES OF NORTH AMERICA

Edited by Christa Watters. Charles Osgood & the ABA, Colorado, 2003. 214 pages; many colour photographs; figures. ISBN 1-878788-31-0. Paperback, £29.50.

Go on, look at the title again (birding on the edge, etc.). Shades of shock and awe, or is it all just so much bilious derring-do by a bunch of Yank listers? Think of this book as a handbag. It contains a lot of unnecessary clutter which, when exposed to the glare of daylight, would be better off chucked in the bin. The photographs range from mediocre to abysmal. They look like old, scrapbook material, yet many are taken within the last decade. The accounts of the place and its birds are hugely varied. Some chapters are riveting. The best by a long chalk is Larry Balch's spellbinding tale of how he conceived and ran Attours (cheesy

titles are *de rigueur* everywhere) for over 20 years. At the other extreme are the pages of poems. Hello? These fall somewhere between tree-hugging and pre-Eskimo Nell.

Actually, I still enjoyed this book, even though I felt that it fell short of documenting the birds and the place to a standard that both deserved. I can imagine the wildness and remoteness, and the wonderment of being 'within touching distance' (900 km) of Kamchatka and an Asian migration wormhole. It was frustrating then to read pseudo-introspective twaddle such as 'Why am I here? Why do I do this?' Give me the money and I will go to Attu! On the other hand, I would find the company of collectors, another constituent of Attu's Yank birders, hard to stomach. Top-class rarities (and who knows how many more) get blasted. Scant mention is made of the practice anywhere in the book. Old World readers may be shocked to know that easily identified rarities, seen and photographed by many people, were then killed. Examples are spring male Narcissus Flycatcher *Ficedula narcissina* and Yellow Bittern *Ixobrychus sinensis*. Perhaps deliberately (as an attempt at emasculation), no clue is given in the book that these birds were shot. At least North America's first Great Spotted Woodpecker *Dendrocopos major*, found on Attu by a lone (and clearly unarmed) observer in October 1985, was allowed a final winter to live until 'birders' returned in April 1986 and bagged it. I trawled through every page of the book wondering if there would be any mention of collecting. I found only one. On page 89, Brooke Stevens, writing a log about her all-women group ('The Murrelets') says, 'The birds that are blown off course are often exhausted and never reach their breeding grounds; some are collected for the record.' Misguided nonsense or tour-guide brainwashing? Bemoaning the lack of current trips, the back-cover blurb effuses, 'and to inspire those, who might, in the future, work toward making such trips possible again'. In fact, visits by boat are planned for 2006. Maybe, in celebration, the vessel will be flying the skull and crossbones?

Anthony McGeehan

A BIRDWATCHERS' GUIDE TO TRINIDAD AND TOBAGO

By William L. Murphy.
Prion Ltd, Cley, Norfolk, 2004.
176 pages; numerous photographs, maps and line-drawings.
ISBN 1-871104-11-4.
Paperback, £14.75.

A certain DIY product is advertised as 'doing exactly what it says on the tin'. Authors of bird-finding guides would do well to follow this maxim. I have never done any DIY and cannot vouch for that product, but surely a bird-finding guide should do exactly what it says on the cover?

This guide covers all major and many minor birding areas on the islands. Detailed directions are given and the birds likely to be seen are listed for each site. Some of the more sought-after species are poorly dealt with, however. In the selected bird list, six places are mentioned for Trinidad Piping Guan *Pipile pipile*, the only bird endemic to these islands, yet only one of these is dealt with in the site guide. The Main Ridge Forest Reserve on Tobago is inexplicably hidden in the Little Tobago Island section, yet this is the only site given for the very localised White-tailed Sabrewing *Campylopterus ensipennis*. Should you wish to see Oilbirds *Steatornis caripensis* at the Caves of Aripo, this book actually recommends either using another book or hiring a local guide! Greater focus on how to find some of the specialities would improve this guide considerably.

Size and weight should be important factors when producing any bird-finding guide but a lot of space here is sadly wasted. The photographs, all in black and white, neither help with finding birds nor enhance the text, as most are poorly reproduced. The first point here also applies to the many line-drawings, and yet there are only 12 maps (one showing the islands' position in the Caribbean), which is far too few. Furthermore, the maps lack detail; for example, few of the areas mentioned in the text for the Nariva Swamp are marked on that map, which will surely lead to a lot of frustration.

Equally wasteful is the baffling inclusion of some irrelevant sections: a half-page on the history of the islands, two pages on the islands' biota (mostly repeated elsewhere), and a ludicrous nine-page *selected* (!) bibliography, only one page of which covers birds. I felt that all the useful information could have been presented in half the space.

This follows a similar format to the other books in the series, which I have found helpful. Opening sections on travel, accommodation, when to go and what to bring are complete and useful. While this guide could be better, it is very reasonably priced and should you visit these islands it would indeed enable you to DIY.

Richard Schofield

Obituary

James Allitt Hancock (1921-2004)

James went to Solihull School in Warwickshire, and thereafter opted to go into the 'business sixth' form rather than to university. From there he went briefly into a bank, which he found dull. The dullness soon ended with the start of World War II – which took James off to India and, towards the end of the war, through to China, where he ended the war as a colonel. It was during this time that he learned Urdu, a language that proved useful on many later trips to India.

After the war he went into oil, into a company (Edwin Cooper) that specialised in making lubricating oils, and gradually worked his way up to President. The company was taken over by one of the giants and eventually absorbed into a large American conglomerate. By this point, James had had enough and, in 1979, took early retirement, enabling him to spend more time on his birds, his photography and his fishing.

His business career was very beneficial to these interests. It took him all over the world and enabled him to build up a wide range of friends, and he used these trips to visit many places, some of which at that time were not as easily accessible as they are now. During these trips he gradually came to concentrate his interests on the herons (Ardeidae) – a group with which his name is nowadays synonymous.

His first work, with Sir Hugh Elliott and illustrated by Robert Gillmor, was a large-format book, *Herons of the World* (London Editions, 1978). Thereafter, books flowed fairly steadily, almost all on herons or wetlands, but one – *Storks, Ibises and Spoonbills of the World* (with James Kushlan and Philip Kahl, Academic Press, 1992) – covered the other large wading-bird families. A final work (*The Herons*, again with James Kushlan, OUP, 2005) is nearing publication at the time of writing, though sadly James saw only an early version of the proofs.

Outside of the herons, James put in a lot of work for ornithological bodies and for conservation. He served on Councils of RSPB and the Fauna and Flora Preservation Society, was Treasurer of the British section of ICPB, and was President of the BTO from 1985 to 1989, at the time of its having to make the big decisions about the move from Tring to Thetford. He was also President of the Hampshire Ornithological Society, from 1986 until 2000.

He was a great lover of the countryside and a very accomplished photographer, a skill that married well with his studies of herons; he was elected to a Fellowship of the Royal Photographic Society in 1982. His other love was fly-fishing on the Hampshire chalk streams; if you were unlucky enough to be a trout, he cast a mean dry fly.

His work was appreciated by many. He was awarded an OBE for 'Services to Ornithology' in 1991 and the BTO's Jubilee medal in 1992, elected a Corresponding Member of the American Ornithologists' Union in 1995 and given an honorary Doctorate by Southampton University in 1999.

He leaves a wife, Sylvia, and three children.

Christopher Perrins



85. James Hancock

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

Controversial choice for Birdfair 2005

BirdLife International has asked the British Birdwatching Fair (www.birdfair.org.uk) to support arguably the most contentious project in the fair's 17-year history: funding the establishment of a national park in Myanmar (Burma). N&c understands that there was disquiet among staff at both the RSPB and BirdLife that Birdfair 2005 will be raising funds for a country whose military regime is one of the most repressive on earth, but the Birdfair organisers and BirdLife directors have all backed the project. The flagship species for this year's Birdfair will be the spectacular Gurney's Pitta *Pitta gurneyi* and the project message will be 'Saving Gurney's Pitta and its rainforest home'.

That rainforest home is the proposed Lenya National Park, in southern Tennaserim. It was here that a BirdLife team found a substantial undiscovered population of this Critically Endangered 'jewel thrush' in April 2004 (*Brit. Birds* 97: 488), following initial sightings the previous year. As the then known world population was barely 12 pairs in neighbouring southern Thailand, this was a major breakthrough.

The Government of Myanmar has now provisionally agreed to a proposal to extend the boundaries of the 2,000 km² Lenya National Park to encompass the areas where the pitta was found; these two further forest blocks will nearly double the park's size to 3,800 km². The additional 50,000 ha is virtually the only lowland Sundaic forest that remains in the world, as on the Thai side of the border the lowland forest has been cleared for oil-palm and rubber plantations. If all the flat lowland forest in Myanmar is saved, the extended Lenya National Park could support up to 1,000 pairs of Gurney's Pitta! In addition, the forest supports Tiger *Panthera tigris*, Asian Elephant *Elephas maximus* and Asian Tapir *Tapirus indicus*. It is clearly a site of major conservation significance and the £150,000+ Birdfair proceeds will be spent supporting the work of BirdLife and the local independent NGO, BANCA, in establishing the park in a region where logging and wildlife trafficking are rampant.

Previous Birdfairs have helped to establish protected areas in other countries with questionable regimes, such as Vietnam, Indonesia and Cuba. Is Myanmar any worse? Birders who have travelled to Myanmar have argued in these pages (*Brit. Birds* 96: 466) that the people of Myanmar can only benefit from tourism income – and contact with the outside world. In engaging with the Burmese junta, BirdLife hopes to promote the development of civil society in Myanmar, particularly through the involvement of local communities in the development of Lenya National Park. And yet... the generals that rule Myanmar laughably told the world that barely 60 of its citizens had died in the Boxing Day tsunami which killed tens of thousands on the adjacent Thai coastline. Are these people who BirdLife can – or should – do business with? N&c would be interested to hear readers' views.

Saemangeum saved at the eleventh hour?

Almost a year to the day after this wonderful wetland on the Yellow Sea coast of South Korea – crucial stopover for the mythical Spoon-billed Sandpiper *Eurynorhynchus pygmeus* – was doomed to obliteration, another court order has halted its reclamation at the eleventh hour. On 4th February, the Seoul Administrative Court ruled in favour of environmental conservation in a legal suit challenging the controversial Saemangeum Reclamation Project, brought by environmental groups and local people living around the Saemangeum tidal flats. The court based its ruling on the fact that there is no longer a clear 'end-use' for the land to be reclaimed. Such a situation is illegal under the Public Waters Act, which demands that if public waters are to be reclaimed, then it must be primarily for agriculture. The court ruled that no economic benefits can be expected from the Saemangeum reclamation project because of the anticipated economic costs caused by water pollution in the proposed reclamation reservoir (essential to developing agriculture); because any land created would be unusable for agriculture; and because of the costs of loss of the tidal-flat ecosystem. Although the reclamation project was originally designed for rice cultivation, the latest suggestion from the local authorities was that it would become the biggest golf course in the world! (See also *Brit. Birds* 96: 463, 613; 97: 152.)

The 40,000-ha project has generated enormous controversy as the area supports the livelihoods of an estimated 25,000 people and some of the largest and most important concentrations of migratory birds in Asia. As a result, the court ruled it necessary to cancel or change the permit to reclaim the public water area,

because the environmental, ecological and economic damage from the project is likely to be huge and irreversible. As the court has now ruled in favour of environmental conservation, the South Korean Government is expected to respond by challenging that ruling at the Seoul High Court. Environmental campaigners in South Korea should be congratulated for continuing to oppose this nonsensical reclamation scheme. You can support them by copying the letter on the Birds Korea website (www.birdskorea.org) and e-mailing it to the Korean embassy in your country.

Spoon-billed Sandpipers go missing

Recent surveys of suspected wintering areas of the Globally Threatened Spoon-billed Sandpiper have not been successful. A number of sites along the Indian east coast, including the Indian Sundarbans (West Bengal) and Lake Chilika (Orissa), where up to 200 birds were reported in 2001, were surveyed. Four birds observed at Point Calimere in December 2004 could not be relocated at this tsunami-devastated site. With a continuing decline on the breeding grounds in 2004, the chances of finding the wintering grounds remain slim; only a few thousand individuals of this extraordinary species may now remain. Despite its lack of success, however, the expedition did initiate and strengthen local awareness of the species, and widened the network of observers in the region.

In 2004, BirdLife upgraded the species to Endangered on the IUCN Red List, and a Spoon-billed Sandpiper Recovery Team was established with the task of co-ordinating international conservation efforts. Observers are requested to submit all wintering and passage records of this species to: Dr Christoph Zöckler (Expedition leader, ArcCona Consulting, Cambridge), e-mail: cz@arccona.com

Audubon – famous son of... Liverpool

A century and a half after his death, John James Audubon (1785-1851), perhaps the greatest of all bird painters, is to be given a permanent home in his adopted British city. Amazingly, it will be the world's first permanent gallery dedicated to the artist of *Birds of America*.

Liverpool was the city which gave Audubon his big break, and in the run-up to its year as European Cultural Capital in 2008, the city is keen to exploit its link with the Haitian-born artist. The city possesses one of only 120 complete sets of Audubon's *Birds of America* – the giant book which contains 435 double elephant folio (100 cm x 75 cm) hand-coloured engravings. The Audubon Room at Liverpool Central Library will open in 2008 following the building's £31.5m refurbishment, and although it falls well short of the aspiration of a gallery in which every Audubon print can be viewed, the Audubon Room will place each of the four volumes of *Birds* on permanent display for the first time, alongside other works from the city's large collection of ornithological illustrations.

Audubon came to Britain to realise his dream of publishing a book containing life-size engravings of all the known birds of America, since it was only here that he could find a printer capable of undertaking the task. He found one, William Lizas of Edinburgh, and then, in July 1826, he arrived in Liverpool in search of a patron and struck gold. Audubon possessed a letter of introduction to the Liverpool investment firm Rathbones, which took him in and offered financial assistance. He spent years in England, supervising the publication of about 200 sets of *Birds* for which subscribers paid the enormous sum of $1,000 a set. Without Liverpool and the Rathbones, Audubon might well have given up and gone home, according to Duff Hart-Davis, author of *Audubon's Elephant*: 'It was the kindness of the people in Liverpool, who took him in and took him to all the social functions, which gave him the confidence in his own intellect and ability, the confidence to go out and make the connections he needed.'

Appropriately, Liverpool subsequently purchased its own copy of *Birds* in 1860 for £165, when a local merchant bequeathed £1,000 for books and materials. It was nearly lost during wartime bombing in 1941, when the library's storage rooms took a direct hit, but the chief librarian, J. F. Smith, removed the four great volumes of *Birds of America* to safety himself. A complete set now makes up the world's most valuable printed book: the last one on the market sold to an anonymous private collector at Christie's in New York, in March 2000, for $8.8m (£4.8m), more than double its estimate. Of the 119 remaining sets – 108 in learned institutions from New York to St Petersburg and 11 in private hands – none is on full display. The current exhibition of Liverpool's copy of *Birds of America* runs at the city's Central Library until March 31st 2005.

Birding through the Rye

The area around Rye, on the East Sussex/Kent border, is rich in good birding sites: Dungeness, Scotney Gravel-pits, Rye Harbour, Pett Level and Hastings Country Park. A new website (www.RXwildlife.org.uk) has recently been set up to provide up-to-date information on birds and other wildlife in the whole area, including organised events. The 'RX' part of the website name refers to the boat registration letters that cover this part of the south coast.

Record numbers of pinkfeet in Norfolk

Co-ordinated counts in Norfolk have revealed a record number of Pink-footed Geese *Anser brachyrhynchus* this winter: no fewer than 147,000, about half the world population of this species (estimated to be some 280,000 birds). This count is a marked increase on last winter's 112,000, and nearly double the numbers counted just five years ago. Most of the geese – 110,000 – were in north and west Norfolk, with the remainder in the Broads, although there is known to be some movement between these areas.

The peak count was on 13th December 2004, with January 2005 counts showing the numbers tailing off slightly, as expected. At the RSPB's Snettisham reserve, where movements to and from the roost on the mudflats of The Wash provide one of Norfolk's greatest wildlife spectacles, the peak count was 35,360, on 20th December.

Numbers in Norfolk are rising partly because of a shift away from favoured wintering areas in Lancashire, but also because of an overall population increase. The pinkfeet are particularly attracted to Norfolk because of its sugar-beet fields, where the crowns and tails left after harvest provide high-energy food, and RSPB spokesman Chris Durdin has acknowledged the important role of the many farmers who tolerate or even encourage Pink-footed Geese on their farms. An advisory leaflet, which gives advice on how best to manage crops for the benefit of both farmers and geese, was distributed with the *British Sugar Beet Review* journal to farmers in areas where overwintering geese are found.

Breeding Golden Plovers at risk from climate change

New evidence suggests that upland birds may be as vulnerable as songbirds to climate change. Researchers from the RSPB and Newcastle and Manchester Universities have found that European Golden Plovers *Pluvialis apricaria* are breeding significantly earlier than 20 years ago. The scientists contend that warmer springs have prompted the change and that the failure of the plover chicks' main food source – craneflies *Tipulus* – to adapt at the same rate could threaten the plovers' future. Other upland species could be affected in the same way.

The paper, *Warmer springs advance the breeding phenology of golden plovers and their prey*, published in the journal *Oecologia*, warns that if climate change predictions prove accurate, Golden Plovers will be nesting three weeks earlier by 2100. The earliest-hatching plover chicks, which normally have the best chance of survival, could in future struggle to find food, reducing overall breeding success, with corresponding implications for population size. An analysis of 25 years' worth of data found that the first plover chicks now hatch on average nine days earlier than in the mid 1980s owing to warmer springs. While craneflies will adapt to some extent too, they are unlikely to occur in sufficient numbers to sustain the earliest plover chicks. Craneflies are abundant on moorland for just 2-3 weeks. Almost 75% of the world's moorland (exposed land above 240 m, often of peat and usually covered by heather *Calluna vulgaris*) is found in the UK. Britain also holds 10-15% of global peat bog.

Upland and moorland birds are thought to be most susceptible to climate change because they inhabit higher, cooler areas. Climatic warming forces them higher, but in the UK there is only so far north, or uphill, they can go. The RSPB is now to identify which upland species are likely to be most vulnerable to the effects of climate change, in a project part-funded by Scottish Natural Heritage. Its researchers will assess data for a wide range of rare and declining species – including Dotterel *Charadrius morinellus*, Eurasian Curlew *Numenius arquata* and Ring Ouzel *Turdus torquatus* – in order to address this question.

Woodland bird records needed!

The article by Rob Fuller and his colleagues in this issue (pp. 116-143) highlights the declines in woodland birds in Britain and looks at possible causes. As part of ongoing research into woodland birds and their habitats, the BTO has produced a Casual Record Form, a copy of which is included in this month's *BB*, for volunteers to record sightings of the following key species: Lesser Spotted Woodpecker *Dendrocopos minor*, Tree Pipit *Anthus trivialis*, Common Redstart *Phoenicurus phoenicurus*, Wood Warbler *Phylloscopus sibilatrix*, Firecrest *Regulus ignicapilla*, Willow Tit *Parus montanus*, Lesser Redpoll *Carduelis cabaret* and Hawfinch *Coccothraustes coccothraustes*. Records are wanted of these species in any habitat, throughout the breeding season (1st March to 30th June). Records for these and other species can also be input online at www.birdtrack.net

This is part of a major new project organised by the BTO, which will be taking part in woodlands right across the country during the next two breeding seasons. The aim of The Scarce Woodland Bird Project is to look at the distribution of a whole suite of woodland birds and the type of woodland habitat they are found in. The list of species includes some that are declining, some with stable populations and others with rising numbers, in an attempt to explain why some woods are good for declining species and others are not, even though the woodlands themselves are apparently similar.

If you are interested in taking part in the main part of the survey, which will involve making just two visits to a pair of woods chosen by yourself, then please contact Su Gough at the BTO (The Nunnery, Thetford, Norfolk IP24 2PU; tel: 01842 750050; e-mail: su.gough@bto.org) as soon as possible for more details.

Northern kite found poisoned

The project to reintroduce Red Kites *Milvus milvus* to the urban fringe of Tyneside suffered its first major setback when one of the released birds was found poisoned. The dead bird was one of 20 young kites released during July 2004 in the first phase of the fourth, and final, Red Kite reintroduction in England. The RSPB confirmed that the kite, found dead in Tynedale, Northumberland, in October 2004, had been illegally poisoned (with a lethal dose of carbofuran). Spare a thought for the headteacher of a local primary school which had adopted the kite, who had to break the news to schoolchildren at morning assembly.

Approval for the agricultural use of carbofuran, previously a widely available insecticide used mainly for soil treatment in root crop, brassica and cereal farming, was withdrawn in 2001. The illegal use of carbofuran to kill wildlife was first proved in 1988, when a baited pigeon carcase was found in southern Scotland. Since then, abuse has spread throughout Scotland and northern England into upland areas, where few root crops, brassicas and cereals are grown. Between 1989 and 2004, no fewer than 107 Red Kites have been confirmed as having been poisoned in the UK, but the true figure will be higher, perhaps significantly so.

The kite was discovered after the Northern Kites project team traced it using signals beamed from a tiny radio transmitter fitted to the bird. Andy Bunten, RSPB North of England regional director, commented: 'This shocking incident should be a wake-up call to the Government to act quickly to plug a loophole in the law which currently allows people to possess lethal poisons, irrespective of whether they have been trained in their use or have a legitimate reason for their possession.' The RSPB is urging Defra and the Welsh Assembly to include in the Wildlife & Countryside Act 1981 a new offence of 'having in one's possession or control any pesticide without lawful authority or reasonable excuse'. In Scotland, the loophole will be closed this spring, leaving English law lagging behind. Despite the loss of this bird, the Northern Kites team are optimistic about the future of the project. Of the 20 birds released last year, 13 remain in the immediate area of Gateshead's Derwent Valley, with others known to be elsewhere in the Northeast.

Peregrine found shot

A week after the Red Kite announcement, the RSPB North of England office had more grim news: a Peregrine Falcon *Falco peregrinus* was found shot near the RSPB reserve at Bempton Cliffs, East Yorkshire. Warden, Trevor Charlton, said: 'Sadly it would appear that yet another rare bird of prey has been killed by a criminal act of destruction. I am shocked by news of this incident and angry that such a spectacular and exciting bird has died in this way. We were hopeful that Peregrine Falcons might once again colonise the cliffs at our Bempton reserve, giving pleasure to thousands of visitors, and the death of a female bird is a real setback.'

Great Auk cave painting

A cave with an underwater entrance on the south coast of France was discovered by a diver in 1991. Cave paintings found in the upper part of the cave still above present sea level include portrayals of three Great Auks *Pinguinus impennis*, among the more usual Ice Age animals. Deposits in the cave have dated its occupation to 18,500 years ago, close to the severest part of the most recent glacial, when sea levels were much lower. (See Clottes, J., & Courtin, J. 2003. Cosquer Cave: an ancient sunken gallery. In: Burenhult, G. (ed.), *People of the Past*. Fog City Press, San Francisco.)
(Contributed by Fred Gauntlett)

Cormorant cull prompts concern

The Government has licensed the killing of 1,500 Great Cormorants *Phalacrocorax carbo* in England since September to protect fish stocks for anglers, the RSPB has reported. That figure could reach 3,000 this winter following changes to the licensing system introduced last year, the society has warned. By comparison, only 4,000 Cormorants were killed under licence in the decade from 1983 to 1992, while the current breeding population in England is just 3,145 pairs.

Julian Hughes, the RSPB's head of species conservation, said: 'Government, angling and conservation bodies have a responsibility to work together... and to develop non-lethal ways to sustain fish populations to ensure a positive future for both angling and Cormorants.' A spokeswoman for the Department for Environment, Food and Rural Affairs (Defra) said the policy was in force only over the winter, when Cormorants have the greatest impact on fisheries. 'The winter Cormorant population in the UK numbers at least 23,000 birds... and the Cormorant population has increased four-fold in the last 25 years... The effect of licensed removal needs to be considered against total wintering numbers and it is misleading to compare these [figures] with breeding numbers, as control will not take place during the breeding season.'

Change of Recorder in Berks & Yorks

Berkshire has a new County Recorder, Chris Heard, whose contact details are 3 Waterside Lodge, Ray Mead Road, Maidenhead, Berkshire SL6 8NP; tel: 01628 633828; e-mail: chris.heard@virgin.net

Please also note a new address for the Yorkshire County Recorder, Geoff Dobbs: Silver Birches, 52 Common Lane, Welton, Brough, East Yorkshire HU15 1PT; tel: 01482 666092.

Monthly Marathon

Photo no. 212: Paddyfield Warbler



Reston Kilgour

86. Paddyfield Warbler *Acrocephalus agricola*, St Mary's, Scilly, October 2001.

When asked by another SUNBIRD leader if I would prepare his next Monthly Marathon solution, owing to his busy tour schedule, my first reaction was 'not a problem'. My second reaction, on seeing the photograph, was 'me and my big mouth!' The bird in Monthly Marathon photo number 212 (*Brit. Birds* 97: plate 381, repeated here as plate 86) looks a nightmare to identify. I would like to say that there is an obvious solution, but there isn't, not for me at least!

It is clearly a passerine, and the combination of a plain tail and lack of any distinctive coloration or prominent field marks should lead us, if only by eliminating all other possibilities, eventually to a warbler (Sylviidae) of some description. We now begin the more detailed examination process and, on a bird as dull and nondescript as this, the two really useful features we can see are a rounded and obviously graduated tail, and the plain, unmarked and quite long undertail-coverts, which reach about halfway along the underside of the tail. This combination of characters rules out *Phylloscopus*, *Hippolais* and *Sylvia* warblers, all of which possess either a square-tipped or a slightly notched tail, and short undertail-coverts. Could the mystery bird be a Cetti's Warbler *Cettia cetti*? Cetti's Warbler has a strongly graduated tail, like that of our bird, and, unique among European warblers, has only ten rectrices, which would seem to match the number visible in the photograph. But those undertail-coverts just don't look right; they are too long, too deep and too pale for Cetti's Warbler. The angle of the bird must be masking two rectrices, and we need to look elsewhere for our solution.



87. 'Monthly Marathon'. Photo no. 214. Twelfth stage in thirteenth 'Marathon'. Identify the species. Read the rules (see page 54), then send in your answer on a postcard to Monthly Marathon, c/o The Banks, Mountfield, Robertsbridge, East Sussex TN32 5JY, or by e-mail to editor@britishbirds.co.uk, to arrive by 30th April 2005.

All of the *Locustella* warblers have rounded tails, so could it be one of these? Lanceolated *L. lanceolata* and Grasshopper Warbler *L. naevia* are readily eliminated since they have conspicuous dark spots or streaks to the centres of the undertail-coverts, as well as heavily marked upperparts, which, if present on our bird, would be visible on the nape. Pallas's Grasshopper Warbler *L. certhiola* should show fairly conspicuous pale tips to all but the central rectrices, and these would be visible on a fresh, unworn tail, which our bird clearly possesses. Furthermore, 'Pallas's Gropper' would also show fine nape-streaking. Turning to the unstreaked *Locustella* species, both River *L. fluviatilis* and Savi's Warblers *L. luscinioides* have broad, rounded tails and long, dark undertail-coverts which

extend almost to the tail tip (as indeed do those on the other *Locustella* warblers). River Warbler also differs in having noticeable pale tips to the undertail-coverts. Clearly, our mystery bird is not a *Locustella*.

This leaves us with just the *Acrocephalus* warblers and, to my eye, we are not dealing with a large bird, so this eliminates the larger members of this group, including Great Reed *A. arundinaceus*, Clamorous Reed *A. stentoreus*, and Thick-billed Warblers *A. aedon*, all of which usually show darker legs than our bird. The smaller streaked *Acrocephalus*, including Sedge *A. schoenobaenus*, Aquatic *A. paludicola* and Moustached Warblers *A. melanopogon*, are equally easy to rule out, as they would exhibit streaking to the crown and nape that would be visible on our bird if present. A process of elimination brought us to this point with relative ease; who says warblers are difficult? We have narrowed our choice down to just four species: Reed *A. scirpaceus*, Blyth's Reed *A. dumetorum*, Marsh *A. palustris* and Paddyfield Warbler *A. agricola*, the so-called 'small, unstreaked *Acrocephalus*' and a notoriously difficult group to separate in the field.

What can we do with our picture? Well, let's try to put an age to this bird using the available clues. We have already established that the rectrices are fresh and unworn, as are the undertail-coverts. As all small *Acrocephalus* have a complete moult during the winter months, in many cases shortly after arriving on the wintering grounds, the mystery bird's tail would appear to be too fresh for a returning summer adult, and suggests that we are dealing with a young bird in autumn. This is further supported by the vegetation visible in the picture: the Bracken *Pteridium aquilinum* and Brambles *Rubus fructicosus* agg. seem to be well past their prime.

What is this bird telling us? Forget the diagnostic in-the-hand criteria, they do not work when you cannot see the wing. Even a glimpse of the tertial pattern, primary projection or primary emarginations would help, but here we are not treated to any of these characters. We can see some primary projection on the right wing but nothing of any benefit with regard to identification. The left wing is more difficult to assess, as it is raised slightly and the tail inconveniently obscures both the primary projection beyond the tertials and the emarginated primaries. Although difficult to interpret, and you may disagree with me at this point, it does not look like a particularly long primary projection, at least not approaching that found on Reed and Marsh Warblers. The undertail features on these four warblers are all quite similar and of little help in supporting the identification. The right leg, lit by sunlight, looks warm pinkish-brown, while the claws appear darker and quite short. Inspection of the left leg reveals no further clues as it is heavily shaded by the body. Leg colour is variable in all four species and is certainly not diagnostic, but offers some clues. In first-winter Reed Warbler, this tends to be brownish with a greyish or even blue-grey tinge, while first-winter Marsh Warbler generally shows pale pinkish-straw-coloured legs, but rarely with a hint of grey. The leg colour of first-winter Blyth's Reed closely matches, or is slightly darker and greyer than that of Reed Warbler. This leaves first-winter Paddyfield Warbler, which generally has pinkish or brownish legs that lack any hint of grey, and is the closest match to our mystery bird.

Taking the combination of a short primary projection and pinkish-brown legs, I am swayed towards Paddyfield Warbler. If only there were one further clue. This may be grasping at straws, but is there just the faintest allusion to paler feathering on the side of the crown, the merest hint of a supercilium perhaps? The more I look, the more there does appear to be an indistinct pale line. Of the smaller unstreaked *Acrocephalus*, only Paddyfield would show a supercilium that extended beyond the eye. Admittedly, this is rather speculative, clutching at the 'final straw', but yes, Paddyfield Warbler is the most likely solution; I must admit at this point that I had to ask the editor to confirm the bird's identity.

Knowing now that it is the Paddyfield Warbler that was much admired on Scilly in October 2001, I set about seeing if there were any additional features I could make out in the photo. There was none, but a similar photo (with the head turned and showing all the features) was published in the *Isles of Scilly Bird and Natural History Review 2001*. Perhaps the best way to identify this bird would have been to trawl through all the rare-bird literature until a photo matched!

James Lidster

The responses to this round of the puzzle reflected James's difficulties with identifying this bird. Almost half (46%) of all entrants opted for Marsh Warbler, with just 33% navigating through the maze of slender clues to arrive at the correct answer of Paddyfield Warbler. All this means that we now have a much smaller group of readers sharing the lead in this round: Mark Edgeller, Jon Holt, Robert Kelsh, Andy Mears, Andy Rhodes, and Jakob and Peter Sunesen each have a sequence of four correct answers.

Eds

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Recent reports

Compiled by Barry Nightingale and Anthony McGeehan

This summary of unchecked reports covers mid January to mid February 2005.

American Wigeon *Anas americana* Scatness (Shetland), 15th January; Lewis (Western Isles), 15th January; Wick (Highland), 16th January to 8th February; Lossiemouth (Moray), 21st-30th January; Angle Bay (Pembrokeshire), 2nd-5th February; Beauly Firth (Highland), 8th-10th February; Hayle Estuary (Cornwall), long-stayer to at least 9th February. Black Duck *Anas rubripes* Tresco (Scilly), long-stayer to at least 9th February. Ferruginous Duck *Aythya nyroca* Chigborough Lakes (Essex), 15th-16th January; Blithfield Reservoir (Staffordshire), 21st-22nd January; Brooklees Lake (Staffordshire), 23rd January; Elstow (Bedfordshire), long-stayer to at least 9th February. Lesser Scaup *Aythya affinis* Lough Barry (Co. Fermanagh), 30th January to 10th February at least; Portmore Lough (Co. Antrim) 30th January, subsequently on Lough Neagh and Reedy Flat (Co. Armagh), present to 10th February at least; Scotney Gravel-pits (East Sussex/Kent), long-stayer to 10th February at least. King Eider *Somateria spectabilis* Whalsay (Shetland), 20th January to 2nd February; Unst (Shetland), 27th-29th January; Loch Ryan (Dumfries & Galloway), long-stayer present to 5th February at least.



Alan Bull

88. Gyr Falcon *Falco rusticolus*, Fair Isle, Shetland, January 2005.

White-billed Diver *Gavia adamsii* Fetlar (Shetland), 18th January (different from the Bluemull Sound bird earlier in the month); Loch Fyne (Argyll), 5th February. Cattle Egret *Bubulcus ibis* Kingston Seymour (Somerset), long-stayer still present to 10th February at least.

White-tailed Eagle *Haliaeetus albicilla* The individual from the Great Bircham (Norfolk) area, mentioned in the last report, wandered along the north Norfolk coast on 18th January, then into the Welney/Ouse Washes area (Norfolk/Cambridgeshire), 19th-22nd January. What was presumably the same bird was then seen 8 km west of Peterborough (Cambridgeshire) on 23rd January, at Venus Pools (Shropshire) on 26th January, Beeley Moor (Derbyshire) on 29th-30th January and Mablethorpe (Lincolnshire) on 11th February. Gyr Falcon *Falco rusticolus* Fair Isle (Shetland), 13th January, possibly same Loch of Spiggie (Shetland), 16th January; Fetlar (Shetland), 15th, 20th January and 2nd February; Benbecula, 5th February, North Uist (both Western Isles), 6th February, presumably same as in January.

American Coot *Fulica americana* Loch of Benston (Shetland), long-stayer present throughout. Killdeer *Charadrius vociferus* Musselburgh (Lothian), 22nd January. American Golden Plover *Pluvialis dominica* Slimbridge (Gloucestershire), 20th January. Short-billed Dowitcher *Limnodromus griseus* North Bull (Co. Dublin), long-stayer, still present to 10th February. Lesser Yellowlegs *Tringa flavipes* Stiffkey (Norfolk), long-stayer still present 6th February.

Bonaparte's Gull *Larus philadelphia* Castletown (Highland), 12th January; Thurso (Highland), 16th January to 1st February; Peterhead (Northeast Scotland), 1st February, probably same Fraserburgh (Northeast Scotland), 9th-10th February. Ring-billed Gull *Larus delawarensis* Up to 20 reported in Ireland. Iceland Gull *Larus glaucoides* Large influx into Britain & Ireland, particularly in late January, with c. 30 in Shetland, and at least 30 on Lewis (Western Isles). In February, 25 at Derry City

dump (Co. Derry) on 2nd, 30 Killybegs (Co. Donegal) on 6th, with 10 Thurso (Highland) and 10 North Uist (Western Isles) in early February. Perhaps as many as ten 'Kumlien's Gulls' *L. g. kumlieni* were seen in Ireland. Ross's Gull *Rhodostethia rosea* Peterhead, 29th January to 11th February. Forster's Tern *Sterna forsteri* Nimmo's Pier (Co. Galway), still present to 10th February.

Snowy Owl *Bubo scandiacus* Coll (Argyll), 27th January, presumed same Tiree (Argyll), 29th January with the same or another on North Uist by the end of January.

Waxwing *Bombycilla garrulus* Flocks widespread and numerous, with reports from the south coast of England, southwest to Devon and Cornwall, with one or two on Scilly, and 'hundreds' in Ireland. The largest groups during the latter part of January included 900 Stoke-on-Trent, 700 Newcastle-under-Lyme (both Staffordshire), 500 Bristol (Avon), 300 Penarth (Glamorgan), 280 Gloucester (Gloucestershire), 270 Runcorn (Cheshire), 240 Droitwich (Worcestershire), 200 Bracknell (Berkshire), 200 Chester (Cheshire), 200 Cotmanhay (Derbyshire), 200 Swansea (Glamorgan), 200 Chadderton (Greater Manchester), 200 Sheffield (South Yorkshire) and 184 Fleet (Hampshire). During the early part of February, some of the larger flocks reported included 314 Southampton (Hampshire), 300 Beeston (Nottinghamshire), 300 Brownhills (West Midlands), 270 Leicester (Leicestershire), 200 Windsor (Berkshire) and 200 Wednesfield (West Midlands). Dusky Warbler *Phylloscopus fuscatus* Kessingland (Suffolk), long-stayer to at least 9th February. Pine Bunting *Emberiza leucocephalos* Wadborough (Worcestershire), 15th-24th January.



Simon Stirrup

89. Lesser Yellowlegs *Tringa flavipes*, Stiffkey, Norfolk, January 2005.



Steve Young/Birdwatch

90. Adult Bonaparte's Gull *Larus philadelphia*, Thurso, Highland, January 2005.



Chris Galvin

91. Pallas's Leaf Warbler *Phylloscopus proregulus*, Crossley, Cheshire, February 2005.



Chris Galvin

92 & 93. This particular colour-ringed Waxwing *Bombycilla garrulus*, a first-winter female ringed in Inverurie, c. 20 km northwest of Aberdeen, on 31st October 2004, was photographed by Chris Galvin in Liverpool on 23rd January (plate 92). That in itself was an excellent result, but Raymond Duncan then informed us that Dave Land had photographed the same individual, on 26th January in Exeter (c. 380 km to the SSW) (plate 93)! Shortly before going to press, we received news that 'RGL' (red/green/light green, the colour rings on the left leg) was still in Devon, having been seen by Brian Heasman on an industrial estate northwest of Newton Abbot, a short 15-km hop from Exeter. Note the unusual yellow feathering in this bird's undertail-coverts.



Dave Land

The extraordinary invasion of Waxwings this winter has gripped the attention of many of the nation's birdwatchers. As well as the marvellous spectacle of large flocks of these attractive creatures, the efforts of a small number of dedicated ringers have resulted in some fascinating ringing movements. For example, a Finnish-ringed bird was caught recently in Sheffield, while a dead Norwegian-ringed bird was handed into the RSPB office in Edinburgh in November. Other particularly notable movements include that of an individual ringed near Aberdeen in late October which turned up in The Netherlands only ten days later, while one ringed in Orkney in late October was retrapped by ringers in central Sweden in early February.

Thanks to a tremendous response by birders and ringers, nearly 100 colour-ring sightings have been reported away from Aberdeen (where colour-ringing effort was concentrated between late October and December) throughout the UK. 'Local' movements in the Aberdeen area have included a round trip of 300 km in under ten days by one individual, and several other records of 100-150 km in only a few days. Thirty-five have also been colour-ringed in Sheffield. It will be fascinating to see what information comes from the large flocks currently in central and southern England. Please continue to check all flocks for colour-ringed birds; the birds are highly mobile, so keep your eye on all suitable berry bushes! Please submit all your sightings of colour-ringed birds to Raymond Duncan (Grampian Ringing Group) raymond@waxwing.fsnet.co.uk. All other sightings of Waxwings, together with other birdwatching records, can be submitted to the BTO's BirdTrack project (www.birdtrack.net).

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Pagham Harbour LNR On the B2145 into Selsey, West Sussex
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Dinton Pastures Country Park Near Reading (M4, A329(M) Woodley turnoff) then A329 to Winnersh and Winnersh Station (B3030)
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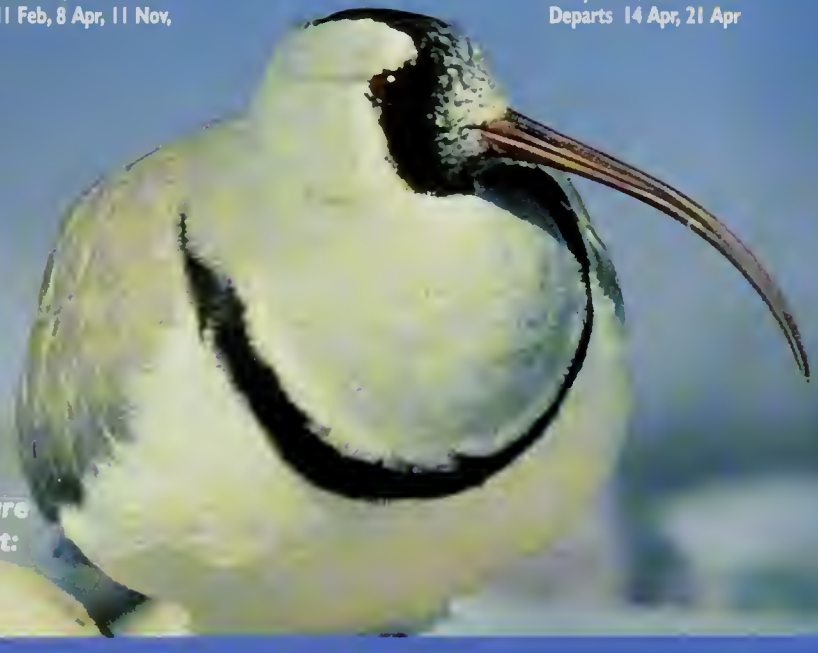
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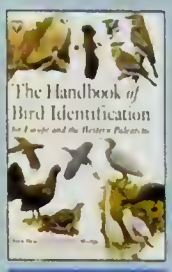
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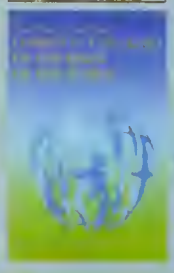
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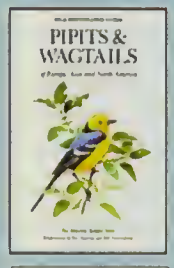
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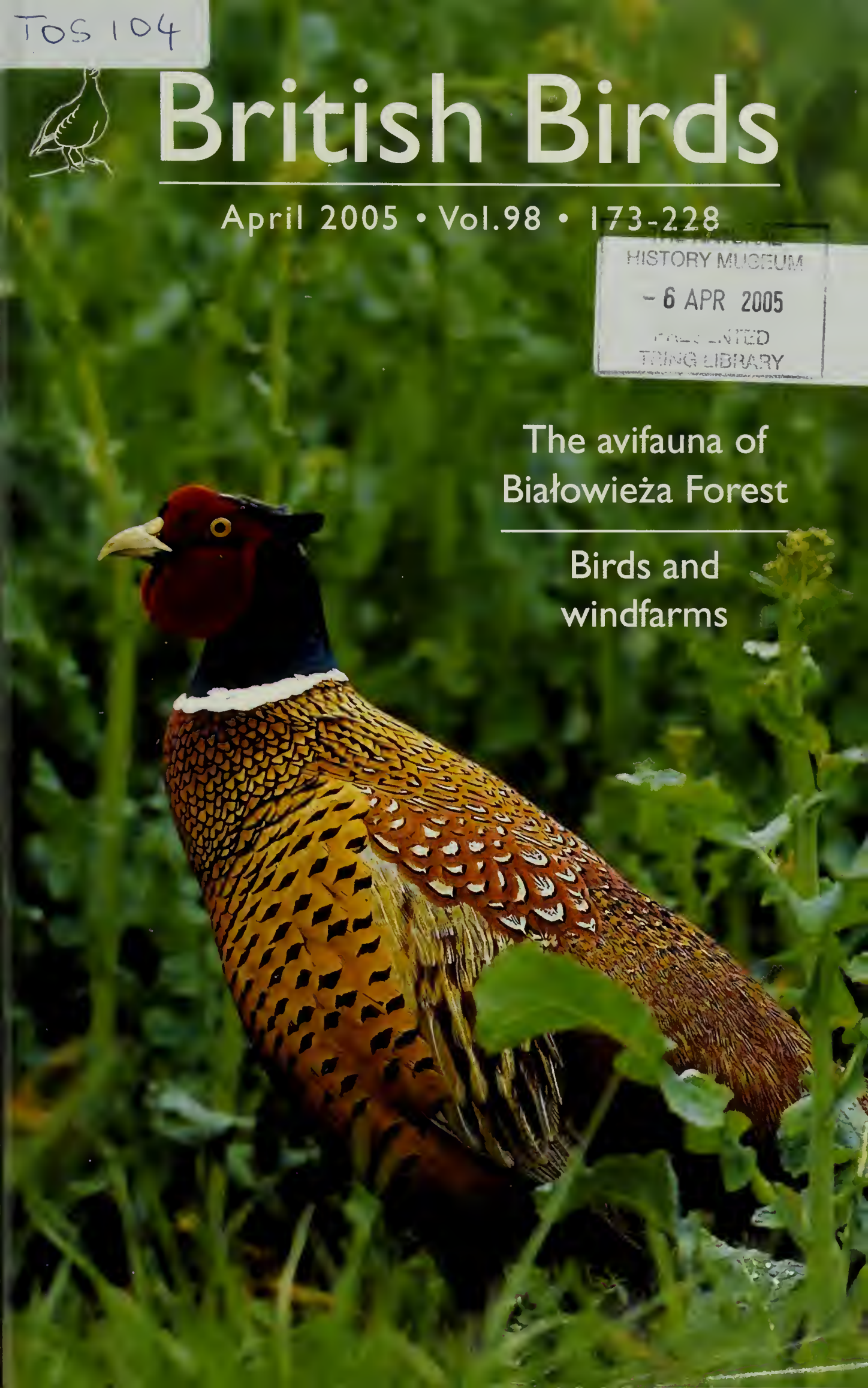
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The avifauna of Białowieża Forest

Birds and windfarms



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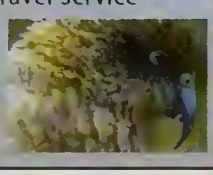
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The avifauna of Białowieża Forest:

a window into the past

Ludwik Tomiałojć and Tomasz Wesołowski



94. Pygmy Owls *Glaucidium passerinum* may number 30-50 pairs in the Polish part of Białowieża Forest in a good year. *Günter Bachmeier*

ABSTRACT As a result of some 500 years of protection, parts of the Białowieża Forest, in Poland, remain in a near-primeval condition. Studies of the breeding birds in the core part of the forest (Białowieża National Park) over 29 years show that the bird community is species-rich but that densities of individual species are usually low, resulting in only moderate overall densities. In some species, low densities are a consequence of large territories and social exclusion, but more often they reflect the undersaturation of habitats by birds, despite superabundant food supply and nest-sites. Low productivity, resulting from high nest predation, may contribute to undersaturation. Species composition and numbers of birds fluctuate within relatively narrow limits, with the populations of closely related species fluctuating either independently of one another or in parallel; interspecific competition for resources plays a minor role. Some attributes of the Białowieża ecosystems resemble conditions in undisturbed tropical forests but contrast sharply with those in fragmented, temperate secondary forests. The present Białowieża avifauna provides a glimpse of that existing in central European forests before their historical transformation by humans. Its present exceptional character arises from

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preservation of most of its pristine features. The forest constitutes a critical reference point for studies of woodland ecology, and its preservation should be a high priority. Unfortunately, commercial logging continues, gradually changing the forest's structure and affecting the birds, especially those dependent on dead wood and old-growth. The relatively small national park (47.5 km²) is increasingly becoming an 'island', in which the long-term preservation of primeval forest features will be impossible.

Our knowledge of the bird biology of pristine forest is full of gaps or misinterpretation, for the simple reason that most temperate forests had been transformed extensively by humans before modern research started. Consequently, any studies conducted in remnants of ancient temperate woodland are important, providing crucial baseline data against which to measure research from secondary or 'man-made' woodlands (Tomiałojć *et al.* 1984; Blondel 1995; Angelstam *et al.* 1997). In Europe, apart from some still extensive boreal (taiga) woodland, only two areas in the transitional boreal-nemoral zone have retained a substantial proportion of their near-primeval mixed deciduous-coniferous forest. These are the Berezinskiy Zapovednik, in northeast Belarus (Byshnev 1991), and the Białowieża (pronounced 'Byawovyezha') Forest on the Belarus/Polish border. For millennia, these forests were probably quite ordinary parts of the central European woodland; their present outstanding position stems from preservation of their ancient features (Tomiałojć & Wesołowski 2004). Białowieża owes its survival to around 500 years of consistent protection, initially as a prestigious hunting ground for Polish kings and, later, Russian tsars. In the twentieth century, the care by rulers has been replaced by formal nature protection. A small part of the forest, some 47.5 km², has been strictly protected as a nature reserve since 1921, and this core part of the forest is termed Białowieża National Park. Apart from some limited intrusion by humans (a few small clear-cut or burnt patches), this area has remained continuously under forest cover for approximately seven millennia, so its forest ecosystems have been shaped by natural ecological processes without direct human intervention. Despite quite extensive, and worrying, recent changes in the neighbourhood, which we discuss below, these processes still operate there, so it is still possible to study birds living in near-pristine conditions.

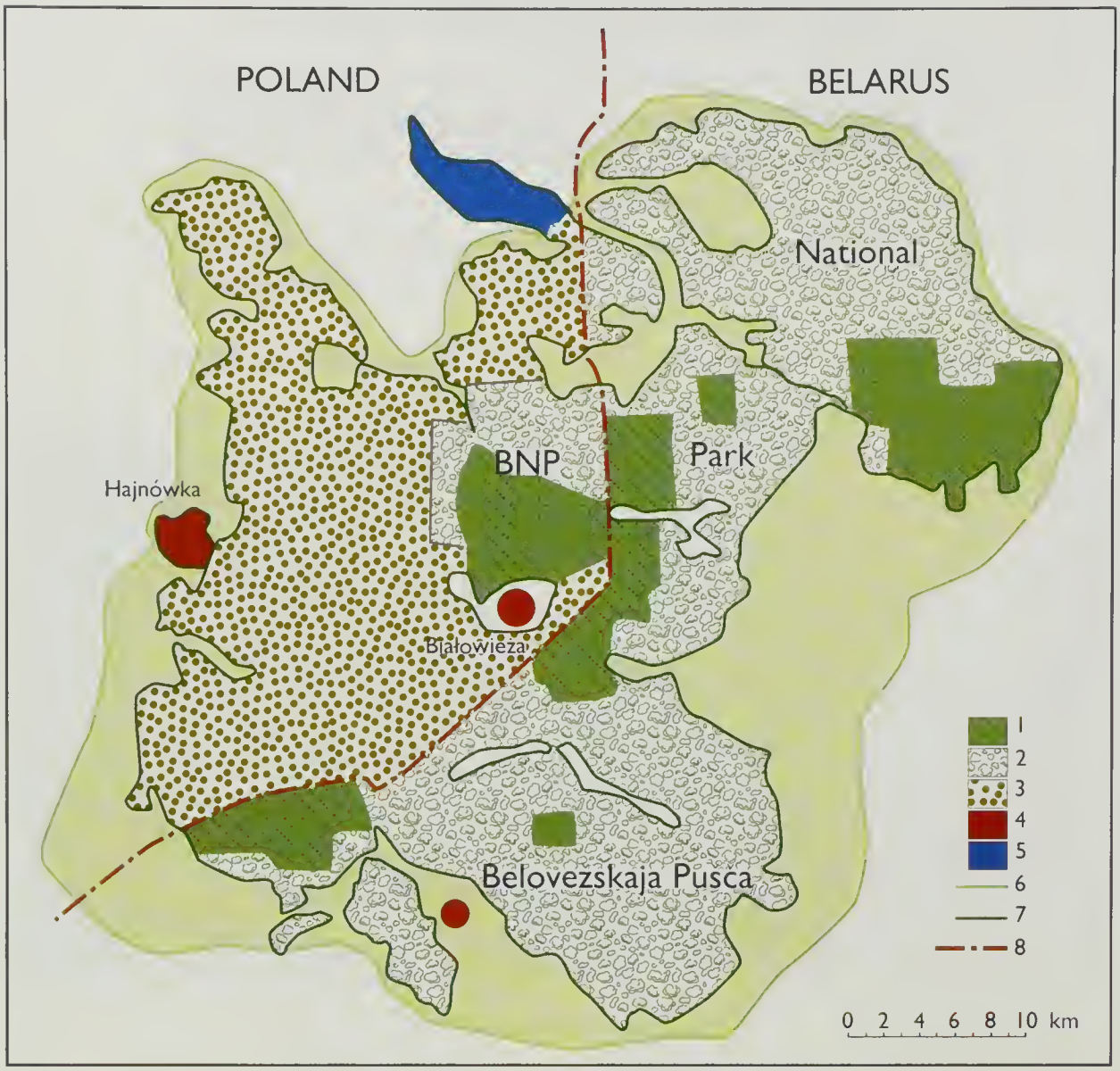
Footnote: 'nemoral': the temperate broadleaf forest zone

The importance of studying European woodland birds in pristine habitats became clear when one of us (LT) visited Britain in 1974 at the invitation of the BTO, and realised that the habits of birds in fragmented British woods were strikingly different from those of birds occupying larger forests in central Europe. These findings led to the launch (in 1975) of a comprehensive programme of ornithological studies in the remaining tracts of primeval forest in Białowieża National Park, which has developed into a long-term (almost 30 years) project. In this paper, we summarise the major findings of this project, distilled from more technical papers and reviews. Given that British forests and their birds may once have shared many of the characteristics of present-day Białowieża (Tomiałojć 2000), this provides readers with an insight into the past, to see how forests and their birds functioned without serious human interference. We also hope that this paper will encourage readers to visit Białowieża, and to support the struggle to preserve the entire Białowieża Forest for future generations.

Study area and methods

Białowieża Forest

Situated on the Poland/Belarus border, Białowieża Forest (BF), which occupies about 1,500 km² (fig. 1), lies at approximately the same latitude as Birmingham (the co-ordinates of Białowieża village are 52°41'N 23°52'E), within the transition zone between boreal and nemoral forests, where Norway Spruce *Picea abies* contributes to most types of local tree-stands. The area is low (mostly 165-170 m above sea level) and flat, the climate subcontinental, with warm summers and fairly cold winters, sometimes quite severe (snow up to 1 m deep, temperatures dropping to -25°C), and with a growing season of c. 208 days. For



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Fig. 1. Map of the whole Białowieża Forest and its surroundings, showing three zones of its protection and the contraction of the former high-forest area. BNP denotes the Polish Białowieża National Park (composed of two protection zones).

Key: 1 strictly protected parts of the neighbouring two national parks; 2 remaining parts of both national parks; 3 the Polish managed part shown jointly with its partly managed nature reserves; 4 main human settlements; 5 dam reservoir; 6 forest boundary in the seventeenth century; 7 present forest boundary; 8 state border.

details, see Faliński (1986, 2002), Tomiałojć & Wesołowski (1990, 1994) and Jędrzejewska & Jędrzejewski (1998).

The BF primeval stands are distinctive among European temperate forests owing to certain features which are characteristic of rich pristine forests in various climatic zones. These are as follows:

- *Multi-storey profile of stands* In particular, those of the oak *Quercus*-lime *Tilia*-hornbeam *Carpinus* type can be subdivided into 5-6 layers. Huge spruces, which rise 10-15 m above the main canopy, are the equivalent of the emergents of tropical forests.
- *Large amounts of dead timber, with many uprooted trees* There is a great deal of dead wood – standing trees, stumps, freshly uprooted trees and old fallen logs – on average 130 m³/ha in oak-lime-hornbeam stands (Bobiec 2002). There are many root-pads (discs of flat root-systems of uprooted trees), some rising vertically up to 7.5 m, forming 'walls' up to 10-20 m long, and constituting a structure intermediate between the ground and the tree-layers (plate 95).
- *Impressive tree height* The maximum height for Norway Spruces in BF is 55-57 m, and for some deciduous tree species 42-45 m (Faliński 1968, 1986).
- *Diverse tree community* BF stands harbour 26 species of trees and 55 shrub species. The

oak-lime-hornbeam stands alone may be composed of a dozen or so tree species. They are also strongly diversified according to the age (up to 400-500 years old) and size of the trees. More details and photographs are given in Tomiałojć *et al.* (1984), Faliński (1986), Tomiałojć & Wesołowski (1990, 1994, 2004).

Long-term ornithological research

Most of our detailed studies were carried out in the strictly protected fragment of the Białowieża National Park (BNP; fig. 1). Although the park was enlarged to 105 km² in 1996, in this paper we define BNP as the strictly protected older part, comprising 47.5 km², which has remained free of human intervention since 1921 and has at no time been affected by forest exploitation other than localised charcoal production or cattle grazing (Faliński 1968). Most of the BNP area is covered by three types of old-growth stands: (i) oak-lime-hornbeam forest (plate 96, p. 181), the richest in terms of tree species and structurally the most diverse, and also the most extensive (covering some 44% of the BNP area); (ii) swampy deciduous forests (riverine stands and alder *Alnus* carrs, plate 97, p. 183), with the greatest quantity of dead wood and covering some 22% of BNP; and (iii) mixed coniferous forests (plate 98, p. 184), dominated by spruces and Scots Pine *Pinus sylvestris* (covering 28% of BNP). The remaining parts are composed of old meadows partially overgrown by secondary woodland.

Beginning in the late nineteenth century, the hunting records of BF birds were collected with varying intensity in different periods. Those phases of extensive, qualitative surveys are summarised in Borowski & Okołów (1988) and Tomiałojć (1995, 2001). Our own intensive, quantitative studies began in 1975, focusing on the ecology and behaviour of birds breeding in the primeval old-growth stands. We have examined the structure and dynamics of whole breeding communities, as well as the long-term dynamics of individual species. We have also investigated how variation in environmental conditions (e.g. weather, food, predators) influences bird numbers. Long-term data on population sizes originate from territory-mapping on seven permanent census plots, each 24-33 ha in size (see Wesołowski *et al.* 2002 for a description of methods). In addition, we have carried out intensive population studies on the breeding ecology and behaviour of 12 species.



L Tomiałojć

95. One of the largest uprooted spruce *Picea* root-systems ('rootpads') in Białowieża Forest, the breeding site of several bird species.

Results: the breeding avifauna of primeval forest

High species richness but moderate densities

On average, about 35 (29-41) species bred in a census plot of 24-25 ha in oak-lime-hornbeam forest in a single season. In a slightly larger (33 ha) and more structurally diverse forest-edge riparian patch, up to 52 species could breed in a single year and 72 species bred at least once during 25 years (Wesolowski *et al.* 2002b). The latter figure may be compared with c. 75 forest and forest-edge species breeding in the *whole* of Britain (Simms 1971). Pooling data from the three types of old-growth forest stands studied at BNP (all census plots, 187.5 ha in total) increases the number of breeding species only to 80 (Tomiałojć & Wesołowski 2004). This indicates that in BNP many species breed alongside one another in the same spot and that the majority are able to breed across all/most types of the old-growth forest. Even gaps in the old-growth stands created by windthrow (the uprooting and felling of trees by strong winds), though different structurally, do not usually attract new species (Fuller 2000). Owing to the high similarity of species composition in different forest types, we suggest that there is just a single old-growth breeding bird community in BNP, with local variants (Tomiałojć *et al.* 1984; Wesołowski *et al.* 2002b).

Extremely high species richness apparently stems to some extent from the geographical position of BF (within the transition zone between western and eastern Europe, and between predominantly coniferous and deciduous forest; see Tomiałojć 2000) and from the retention of most of its avifauna (i.e. with few extinctions; see below). More importantly, it seems to reflect the fine-scale diversity within pristine forest stands, which offers various microhabitats (e.g. snags, holes, rootpads, tiny water pools) to satisfy the requirements of many species. Our data show that, in deciding where to settle, birds are more influenced by the structural properties of a patch of woodland than by the general type of habitat (Wesołowski *et al.* 2002b; Tomiałojć & Wesołowski 2004). Only a minority of species in BNP show clear habitat specialisation, and these birds are mostly restricted to riverine stands (e.g. Lesser

Box 1. The avifauna of Białowieża Forest.

This gives a summary of the main bird groupings which occur in the forest. Full documentation is available in Borowski & Okołów (1988), Tomiałojć (1995, 2001), Tomiałojć & Stawarczyk (2003) and Wesołowski *et al.* (2003).

Waterfowl In pristine Białowieża Forest (BF), this group was poorly represented. Judging from present-day habitat requirements and historical data, the native species were those which favour marshland, for example the common dabbling ducks (Mallard *Anas platyrhynchos*, Eurasian Teal *A. crecca*, Garganey *A. querquedula*, Shoveler *A. clypeata*), Little Grebe *Tachybaptus ruficollis*, Grey Heron *Ardea cinerea*. During the last 40 years, this group has been enriched by construction of artificial lakes within the forest in the Belarussian part, which have attracted further breeding species (including Mute Swan *Cygnus olor*, Greylag Goose *Anser anser*, Gadwall *Anas strepera*, Common Pochard *Aythya ferina*, Tufted Duck *A. fuligula*, Ferruginous Duck *A. nyroca* and Common Goldeneye *Bucephala clangula*).

Gamebirds Two formerly common forest grouse, Capercaillie *Tetrao urogallus* and Black Grouse *T. tetrix*, are on the verge of local extirpation, though some hundreds were reported as recently as the 1920s. There is no evidence that they breed currently in BNP; only a few still survive in the Belarussian part of the forest. Hazel Grouse *Bonasa bonasia* is still widespread, while Grey Partridge *Perdix perdix* and Common Quail *Coturnix coturnix* are scarce breeding species among larger glades.

Storks Both species breed in good numbers. Black Stork *Ciconia nigra* is native to the area, while only speculative argument can be offered for the provenance of White Stork *C. ciconia*.

Diurnal raptors The most numerous breeding species are Common Buzzard *Buteo buteo* and Honey-buzzard *Pernis apivorus*, followed by Lesser Spotted Eagle *Aquila pomarina* (c. 60 pairs in the Polish part of the forest), while Northern Goshawk *Accipiter gentilis* and Eurasian Sparrowhawk *A. nisus* are less numerous. Other species, such as Booted *Hieraaetus pennatus* and Short-toed Eagles *Circaetus gallicus*, Montagu's *Circus pygargus* and Marsh Harriers *C. aeruginosus* and Hobby *Falco subbuteo*, occur on both sides of the state border, with just a few pairs in each part. Single pairs of Black *Milvus migrans* and Red Kites *M. milvus* have bred only sporadically, while a pair of Golden Eagles *Aquila chrysaetos* recently resettled in the Belarussian part of the forest. Breeding by Hen Harrier *C. cyaneus* and Peregrine Falcon *F. peregrinus* was documented only for the period prior to the 1960s; a few pairs of Spotted Eagles *A. clanga* have recently been rediscovered in the eastern part, and during the 1990s a pair of White-tailed Eagles *Haliaeetus albicilla* settled to breed in the Belarussian part of the forest. Common

Spotted Eagle *Aquila pomarina*, Common Crane *Grus grus*, Green Sandpiper *Tringa ochropus*) or coniferous forest (e.g. Pygmy *Glaucidium passerinum* and Tengmalm's Owls *Aegolius funereus*, Nutcracker *Nucifraga caryocatactes*).

The occurrence of many breeding species in one area might lead to a high overall bird density, but this is not the case in BNP. Overall densities range from about 40 pairs/10 ha in coniferous forest to almost 120 pairs/10 ha in the riverine plot at the forest edge (fig. 2). These levels are no higher than in managed woodlands of Germany or England (Flade 1994; Fuller 1995), but several times lower than those found in fragmented English woods (e.g. 400 pairs/10 ha in Somerset or up to 252 pairs/10 ha in Wytham Woods, Oxfordshire; Parsons 1976, BTO data). Moderate overall densities in BNP result from low densities of most constituent species; only a few species breed regularly at densities of more than 5 pairs/10 ha (Tomialojć *et al.* 1984; Wesołowski *et al.* 2002b). As a rule, Common Chaffinch *Fringilla coelebs* (>20 pairs/10 ha in some cases) is the most numerous species, while locally, and in some years, Collared Flycatchers *Ficedula albicollis* outnumber them in the oak-hornbeam stands (Walankiewicz *et al.* 1997). The group of relatively abundant species also contains Robin *Erithacus rubecula* and Song Thrush *Turdus philomelos* (all habitat types), sometimes Wood Warbler *Phylloscopus sibilatrix* (mostly dry stands), Blackcap *Sylvia atricapilla* (mostly swampy forest), Hawfinch *Coccothraustes coccothraustes* (oak-hornbeam habitat), Goldcrest *Regulus regulus* and Coal Tit *Parus ater* (coniferous forest), and Common Starling *Sturnus vulgaris* (forest edge). The densities of most other species remain below 3 pairs/10 ha; these constitute, on average, 58% of the breeding-bird list in riverine forest and up to 71% in the coniferous forest (Tomiałojć & Wesołowski 2004). Many of the low-density species breed in much higher densities elsewhere in Europe, in woodland transformed by human activity, e.g. Wood Pigeon *Columba palumbus* – up to 240 times higher; Blackbird *T. merula* – 40 times; Great Tit *P. major* – 10 times; and Wren *Troglodytes*

Box 1. The avifauna of Białowieża Forest. continued

Kestrel *F. tinnunculus* no longer breeds in BF.

Gruiformes All species, with the possible exception of Common Coot *Fulica atra*, are native. Most are still widespread (including Corn Crake *Crex crex* and Common Crane *Grus grus*), while some (e.g. Spotted *Porzana porzana* and Little Crakes *P. parva*) must have declined after the drainage of wetlands.

Charadriiformes As a group of native BF birds, the waders suffered marked reduction in abundance and species richness after wetland reclamation. Only the 'forest' species, including Woodcock *Scolopax rusticola*, Common Snipe *Gallinago gallinago* and Green Sandpiper *Tringa ochropus*, have remained fairly common, though probably all have declined during the recent dry years. Other species have disappeared or been reduced to irregular breeding pairs, restricted to remaining marshes of the eastern part: Great Snipe *Gallinago media*, Black-tailed Godwit *Limosa limosa*, Eurasian Curlew *Numenius arquata* and Common Redshank *Tringa totanus*. Ruffs *Philomachus pugnax* no longer breed in BF, while Marsh Sandpipers *Tringa stagnatilis* occasionally breed in the neighbouring Siemanówka dam lake. Artificial lakes have attracted breeding Black-headed Gulls *Larus ridibundus* plus Common *Sterna hirundo*, Black *Chlidonias niger* and White-winged Black Terns *C. leucopterus*. Little Gull *L. minutus* breeds sporadically in the neighbourhood, at Siemanówka.

Pigeons Of three native species, Wood Pigeon *Columba palumbus* is widespread though remarkably scarce and secretive, Stock Dove *C. oenas* is not uncommon, while the declining Turtle Dove *Streptopelia turtur* is a scarce breeder along the forest edges. Since the late 1950s, Collared Doves *S. decaocto* have bred in villages.

Owls Of the nine species recorded as breeding in BF, all are native with the exception of Barn Owl *Tyto alba* and Little Owl *Athene noctua*, which are thought to have colonised during the 18th-19th centuries. Tawny Owl *Strix aluco* is the most numerous species, while Long-eared *Asio otus*, Pygmy *Glaucidium passerinum* and Tengmalm's Owls *Aegolius funereus* occur patchily, also in BNP. During good years, in the Polish part of the forest, there may be 30-50 pairs of each of them. Between one and several pairs of Eagle Owl *Bubo bubo*, Little Owl and Barn Owl are still known. Great Grey Owl *S. nebulosa*, a real rarity, has recently been rediscovered in the Belarussian part, where there are a few pairs, while in the Polish part it is represented by only sporadic visitors. Short-eared Owls *Asio flammeus* bred irregularly in marshes during the 1940s.

Coraciiformes and allies European Roller *Coracias garrulus* and Hoopoe *Upupa epops* are both declining. The

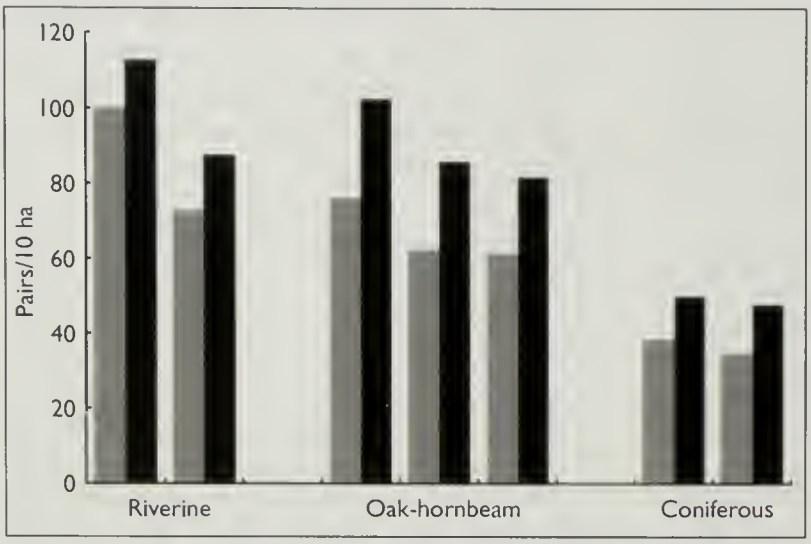


Fig. 2. Overall densities of the bird community in the Białowieża National Park were consistently higher during the 1990s (black) than during the 1970s (grey); derived from Tomiałojć *et al.* (1984) and Wesołowski *et al.* (2002).

troglodytes – 8 times (Tomiałojć 1980, 1993; Wesołowski 1983; Wesolowski *et al.* 1987).

Given these statistics, the question of why the density of birds is so low in Białowieża Forest compared with secondary woodland elsewhere in Europe became a focus for our research. Theoretically, two mechanisms could be involved. Perhaps low density is a result of undersaturation – i.e. breeding habitats are not fully utilised, and bird density is determined by the numbers surviving until (or arriving in) the spring. In this case, all the birds present can settle and breed, while social intolerance plays no role as a limiting factor. Alternatively, the habitats could be saturated with birds, and low densities arise from social intolerance; in other words, there are more would-be settlers than places to breed, and some birds are excluded from breeding by social interactions. In this case, territorial behaviour and other forms of social intolerance act as an important limiting factor.

We found evidence for the operation of both mechanisms. The repopulation of experimental areas by Wrens, Wood Warblers and

Box 1. The avifauna of Białowieża Forest. continued

former was once not uncommon in Białowieża Glade (the oldest deforested glade in BF, some 13 km² and dating back to the sixteenth century, and the setting for Białowieża village – see fig. 1) and along BNP edges, but is now a rare visitor from its last remaining breeding sites north of BF. Hoopoe, formerly a common species, no longer breeds in the Białowieża Glade, although it occurs along the edges of BF in small numbers. European Nightjar *Caprimulgus europaeus* is a regular breeder in the managed conifer-dominated plantations with clearings, while several dozen pairs of Common Swift *Apus apus* breed in high trees.

Woodpeckers BF is famous for its woodpeckers – nine breeding species, all native. Besides three common *Dendrocopos* species (Great Spotted *D. major*, Middle Spotted *D. medius* and Lesser Spotted *D. minor*), Black *Dryocopus martius*, White-backed *Dendrocopos leucotos* and Three-toed Woodpeckers *Picoides tridactylus* occur regularly. Grey-headed Woodpecker *Picus canus*, the much scarcer Green Woodpecker *Picus viridis* and Wryneck *Jynx torquilla* settle mostly along the forest edges. Expanding its range from the south, the Syrian Woodpecker *D. syriacus* has been seen twice near Białowieża.

Larks and motacillids Of three breeding larks, two wagtails and three pipits, most are native species, but the Crested Lark *Galerida cristata* probably arrived in the late eighteenth century, when permanent forest-villages were established. Wood Lark *Lullula arborea*, which initially bred in burned areas and along forest edges, is fairly widespread in the drier clear-cut areas of the managed part. In addition, Citrine Wagtail *Motacilla citreola* has started to breed near the Siemianówka dam lake in recent years.

Turdids Of 13 species of breeding Turdidae, there are three native thrushes plus Redwing *Turdus iliacus*; the last species has colonised BF edges and village parks since the 1950s. Fieldfare *T. pilaris* is remarkably scarce. Among the chats, Thrush Nightingale *Luscinia luscinia* is a widespread breeder, though recently declining; Common Redstart *Phoenicurus phoenicurus* is rather scarce; while Bluethroat *L. svecica* is on the verge of disappearing as a breeding bird. Black Redstart *P. ochruros* is a twentieth-century coloniser of villages in the forest, while Common Stonechat *Saxicola torquatus* is the newest coloniser, breeding since 1993.

Warblers and kinglets No fewer than 18 warbler species breed. The only newcomer among them seems to be Greenish Warbler *Phylloscopus trochiloides* (usually only unmated males, although proved breeding has occurred on three occasions; Tomiałojć 1995 and unpubl.). Among the remaining species, there are three *Locustella* warblers (including River Warbler *L. fluviatilis*, a common breeder, and Savi's Warbler *L. luscinioides*, which is more



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96. A fragment of the oak *Quercus*-hornbeam *Carpinus* forest in the Białowieża National Park, the habitat with densest populations of Collared Flycatcher *Ficedula albicollis* and Hawfinch *Coccothraustes coccothraustes*.

Box 1. The avifauna of Białowieża Forest. continued

locally distributed), four common *Acrocephalus* warblers (including Marsh *A. palustris* and Great Reed Warblers *A. arundinaceus*), plus – once breeding in BF marshland, and maybe still – Aquatic Warbler *A. paludicola*. Among the other warblers are five *Sylvia* representatives (including Barred Warbler *S. nisoria*, which is fairly common among clearings and young forest plantations), three common *Phylloscopus* species and Icterine Warbler *Hippolais icterina*. Both European kinglets occur, of which Firecrest *Regulus ignicapilla* is a scarce breeder (the first nest was found in BNP in 1975).

Flycatchers All four breeding species, including Red-breasted Flycatcher *Ficedula parva*, are fairly common, while Collared Flycatcher *F. albicollis* is, in some years, the most numerous breeding species in oak-hornbeam stands in BNP.

Tits and allies All six breeding *Parus* tits, Eurasian Nuthatch *Sitta europaea* and Eurasian Treecreeper *Certhia familiaris* are common and native. In old-growth stands of BNP, only Willow Tit *P. montanus* is scarce, though it is common in young willow-birch thickets and pine plantations. Short-toed Treecreeper *C. brachydactyla* does not breed in the area.

Shrikes Red-backed Shrike *Lanius collurio* remains common among young managed stands and clearings, Great Grey Shrike *L. excubitor* is a scarce but regular breeder, while Lesser Grey Shrike *L. minor* was reported to breed not uncommonly during the 1940s, and scarcely until 1981. The few remaining pairs of this species in Poland breed in the agricultural areas north of BF.

Corvids BF harbours three native corvids (Eurasian Jay *Garrulus glandarius*, Nutcracker *Nucifraga caryocatactes* and Common Raven *Corvus corax*). Two others, very scarce until recently, Magpie *Pica pica* and Hooded Crow *C. cornix*, may have bred in larger river valleys in pristine times. Two further species arrived later: Western Jackdaw *C. monedula* breeds sporadically in human settlements among larger glades, while Rook *C. frugilegus* breeds only in Hajnówka town.

Other passerines Apart from granivorous passerines common in central Europe, Siskins *Carduelis spinus* and Common Crossbills *Loxia curvirostra* breed in highly variable numbers. All but House Sparrow *Passer domesticus*, Serin *Serinus serinus* and Common Rosefinch *Carpodacus erythrinus* are native to the area. The last species has bred in BF since the 1950s, and is now widespread. Among the four breeding buntings, Ortolan *Emberiza hortulana* and Corn Buntings *E. calandra* are most probably the newcomers, the latter rare until now.

Great Tits after the removal of territory owners shows that some males of these species may be prevented from establishing territories at densities as low as 1.5-2 territories/10 ha (Wesołowski 1981; Wesołowski *et al.* 1987; Wesołowski & Tomiałojć 1995). Nonetheless, spatial undersaturation is also a common phenomenon. For example, an area which contained 21 Wood Warbler territories in one season remained empty in another, without any noticeable change in forest structure or food resources (Tomiałojć *et al.* 1984; Wesołowski & Tomiałojć 1995). Furthermore, Eurasian Nuthatch *Sitta europaea* territories did not occupy all the available space, even in years of relatively high numbers, and undersaturation probably occurred most of the time in this species (Wesołowski & Stawarczyk 1991), while, in poor years at least, Great Tits were probably not sufficiently numerous to fill the available space (Wesołowski *et al.* 1987).

Some characteristics of the BNP breeding avifauna (high species richness, few dominants, prevalence of rare species) are similar to those recorded in tropical rainforests. This suggests that natural differences in species richness and breeding bird community structure between temperate and tropical forests may have been less pronounced in the past, and that contemporary differences owe much to man-made transformation of most temperate forests.

Long-term stability in a variable world

Species composition and species richness have shown no consistent change during the 25 years of our research, but mean overall densities, in all plots, were 50% higher in the late 1990s than during the late 1970s (Wesołowski *et al.* 2002b). This reflects the increasing populations of several species, notably Blackbird, Collared Flycatcher, Marsh Tit *Parus palustris* and Chaffinch. The fact that the increasing species differed so much in their food requirements, nest-sites and migratory patterns suggests that a number of causal factors were responsible. Neither severity of winter weather nor variation in seed crops, rodent numbers or caterpillar abundance (see below) showed comparative long-term trends in the forest which could account for the observed increases (Wesołowski & Tomiałojć 1997; Wesołowski *et al.* 2002b; Wesołowski 2003). Nonetheless, in spite of the trend of increasing numbers, the narrow limits within which populations varied are remarkable when compared with the magnitude of changes recorded in other habitats over the same period, such as the upheaval in farmland bird communities in western Europe (e.g. Donald *et al.* 2001, Schifferli 2001). Of course, the variation in bird numbers in BNP is trivial when compared with that of rodent numbers in the same area (over 40-fold), the hornbeam seed crop (over 900-fold) or the numbers of defoliating caterpillars (up to 2,000-fold) (Wesołowski & Tomiałojć 1997; unpubl. data).

Changes in numbers of birds, even closely related species, were mostly independent of one another, or positively correlated (Wesołowski & Tomiałojć 1997; Wesołowski 2003; fig. 3). Such a pattern of changes does not support the idea of tightly organised, saturated, resource-tracking, competitively interacting bird communities (MacArthur 1972). Rather, the BNP breeding bird community is a loose assemblage of species, living together yet largely independent of one another. Frequent undersaturation and lack of close coupling between resources and changes in bird numbers (see below) indicate that interspecific competition has apparently been relatively unimportant (Wesołowski 2003).

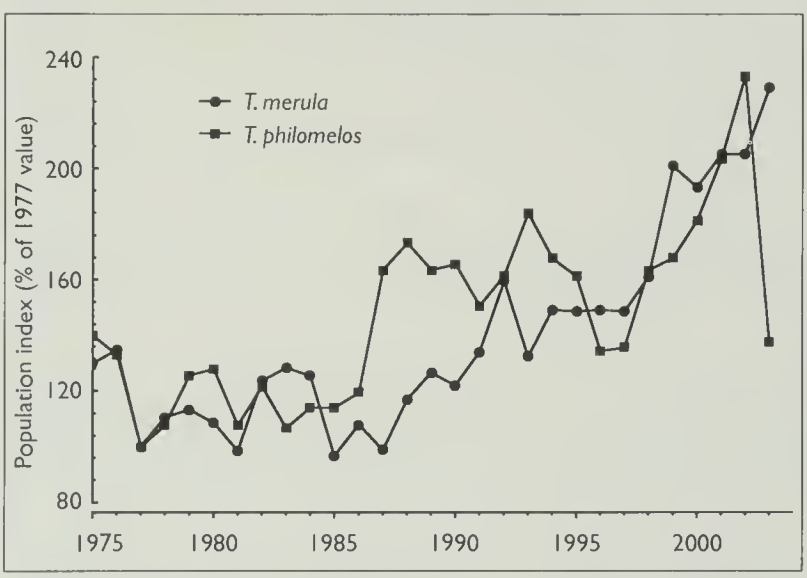


Fig. 3. Several congeneric species pairs, such as Blackbird *Turdus merula* and Song Thrush *T. philomelos* shown here, exhibit non-compensatory changes in their abundance (i.e. their populations are largely independent of one another) in Białowieża National Park; from Wesołowski & Tomiałojć (1997) and Wesołowski *et al.* (2002).

Pristine features in habitat utilisation

The interior of BNP is more than 10 km from extensive farmland, and 3 km from small fields in forest clearings. Despite this, it is inhabited by Honey-buzzards *Pernis apivorus*, Common Buzzards *Buteo buteo*, Stock Doves *Columba oenas*, Wood Pigeons, Common Swifts *Apus apus* and Blackbirds. When breeding deep in the forest, these birds do not fly to distant fields but forage locally, in the forest (Tomiałojć *et al.* 1984; Tomiałojć & Wesołowski 1994; Jędrzejewski *et al.* 1994a; van Manen 2003). This implies that, originally, these were interior-forest species and that they developed a tendency to exploit open-land food resources as European woodland was fragmented. Conversely, two species which breed commonly in fragmented woods elsewhere in Europe retain a markedly restricted distribution in BF: in most years Starlings breed exclusively along the forest edges, while Tree Sparrows *Passer montanus* do not breed in the forest at all, being found only where there are human settlements (Tomiałojć *et al.* 1984; Wesołowski *et al.* 2003).

Hole-nesting birds are not limited by a shortage of holes

Hole-nesters serve as a textbook example of species limited by a shortage of nest-sites and interspecific competition for them (reviewed in Newton 1998). Yet holes are superabundant in BNP (Wesołowski 1989, 1996, 2002; Walankiewicz 1991, 2002; Wesolowski & Rowiński 2004) and interspecific conflicts over this resource hardly occur. Tree holes and cavities are so abundant that even Wrens, Dunnocks *Prunella modularis*, Robins and Blackbirds nest in them frequently. In the case of Blackbird, c. 49% of nests may be in holes or cavities with large entrances (Tomiałojć 1993). This demonstrates that population limitation of hole-nesting species by shortage of nest-sites and strong interspecific competition for them could be new for this group of birds, something they have experienced rarely in their evolutionary past, for example in (formerly rare) extensive young forest patches.

Severe winters are not normally detrimental

Bird populations in the temperate zone are often limited by food resources during the non-breeding season and by harsh winter weather. As the winters of eastern Poland are harsher than those of western Europe (with snow cover lasting up to three months and temperatures dropping below -20°C), one would expect birds in Białowieża to be strongly affected by severe weather, but this is only partially true. Many



L Tomiałojć

97. The riverine ash *Fraxinus*-alder *Alnus* stand in Białowieża Forest, characterised by the richest ground- and bush-layers.



L Tomiałojć

98. A gap in the mixed coniferous (spruce *Picea*-pine *Pinus*) stand in Białowieża Forest, with some deciduous tree species.

species, including Wren, Robin, Starling and Chaffinch, migrate to areas with a milder climate (primarily to southwest or west-central Europe). The local residents, as a group, are affected by winter severity, and we found that overall numbers were positively correlated with temperatures in the preceding winter (mean temperature in December-March; Wesołowski 1994; Wesołowski & Tomiałojć 1997). Nonetheless, at the species level, only Middle Spotted Woodpecker *Dendrocopos medius* and Goldcrest were strongly affected by harsh winters, while others showed either no correlation (e.g. Great Spotted Woodpecker, Nuthatch, Eurasian Treecreeper *Certhia familiaris*) or weak correlation (e.g. Marsh, Blue *Parus caeruleus* and Great Tits) with winter temperatures.

In other forests and regions, the autumn seed supply often interacts with winter weather conditions to influence the numbers of Nuthatches, Great Spotted Woodpeckers, tits and Siskins *Carduelis spinus* in spring (Wesołowski 1994). These species regularly forage on tree seeds in the non-breeding period, as well as in early spring. The numbers of Białowieża residents, however, were dependent neither on deciduous tree seeds nor on those of spruce (Wesołowski 1994; Wesołowski & Tomiałojć 1997). This was a completely unexpected finding, as the seed supply has a dramatic effect on local mammals, with rodent outbreaks in mast years (Pucek *et al.* 1993). Although they utilise tree seeds, the birds in BNP appear to be less dependent on particular types of seeds than elsewhere. This may be because of the higher local diversity of alternative food, as the BNP deciduous stands are composed of 10-12 tree species. In such multi-species and multi-aged stands, the birds can switch to alternatives when one particular food source fails, without any appreciable effect (Wesołowski 1994; Wesołowski & Tomiałojć 1997). Observations showing that birds in these primeval conditions hardly ever use bird feeders (Wesołowski 1995) support this explanation; even in winter there is adequate food supply for both insectivores and seed-eaters. Deep snow cover can spell trouble for rodent eaters, however, as shown by a marked decline in Tawny Owls *Strix aluco* after the unusually snowy winter of 1995/96 (Jędrzejewska & Jędrzejewski 1998).

Spring food resources are usually abundant

Invertebrate specialists comprise c. 85% of the local breeding-bird assemblage and approximately half of these collect food in the tree canopy. Leaf-eating caterpillars constitute a substantial part of nestling diet, in some species 70-80% (e.g. Middle Spotted Woodpecker and Marsh Tit; Wesołowski 2003). It might be



Ray Tipper

99. Song Thrush *Turdus philomelos* is a common breeding species in all habitat types in Białowieża Forest. Typically a highly secretive bird, it has only recently become more approachable along tourist trails through the forest.

expected that numbers of insectivorous birds would be strongly affected, either directly or indirectly (via production of young), by the enormous (up to 2,000-fold) variation in the geometrid caterpillar supply (Wesołowski & Tomiałojć 1997; Wesołowski *et al.* 2002b). For example, the defoliating Winter Moth *Operophtera brumata* caterpillars usually occur in low numbers, with their outbreaks (which lead to partial or total defoliation of deciduous trees) usually 8-11 years apart (Wesołowski & Tomiałojć 1997). Nonetheless, bird numbers were found to be largely independent of variation in caterpillar abundance, and numbers of only three of 13 crown insectivores were positively correlated with this food source. Furthermore, in all species studied so far, starvation and brood reduction were found to be unimportant, even during the low caterpillar years (Wesołowski 2003). Birds in Białowieża laid clutches as large as or larger than the highest values recorded elsewhere and polygyny occurred frequently (Wesołowski 1987), neither of which would be expected if food was in short supply. This suggests that food resources for insectivores are usually superabundant during the breeding season, and that the effects of food shortage or competition for food cannot account for variation in bird numbers (Wesołowski 2003). This contrasts markedly with the situation in deciduous forests in western Europe and North America, where caterpillar resources are often consistently low and signs of breeding-season food limitation have been observed (Holmes *et al.* 1986; Newton 1998).

While insectivores could apparently compensate for missing geometrid caterpillars by switching to alternative food sources, this was not so with rodent specialists. Although Common Buzzards and Tawny Owls hunted mostly birds when rodents were unavailable, these two species could not fully compensate for lack of their main prey, and laid smaller clutches or postponed breeding during rodent crashes (Jędrzejewski *et al.* 1994a,b; van Manen 2003).

Predation strongly reduces bird productivity

In BF, birds face a diverse assemblage of predators, with over 30 species using various techniques of prey detection and attack; compared with most European forests, predator diversity here is two or three times higher (Tomiałojć *et al.* 1984). As well as raptors, owls and corvids (see below), there are 11 carnivorous mammals. In descending order of abundance, these are Weasel *Mustela nivalis*, Pine Marten *Martes martes*, non-native Raccoon Dog *Nyctereutes procyonoides*, Polecat *Mustela putorius*, Red Fox *Vulpes vulpes*, Stoat *Mustela erminea*, Wolf *Canis lupus*, Lynx *Felis lynx*, Badger *Meles meles*, Otter



Paul Doherty

100. The Honey-buzzard *Pernis apivorus* is one of the most numerous diurnal raptors in Białowieża Forest, along with Common Buzzard *Buteo buteo*.

Lutra lutra and American Mink *Mustela vison* (replacing the now-extinct European species; Jędrzejewska & Jędrzejewski 1998). In addition, there are non-specialised species, such as Wild Boar *Sus scrofa*, Red Squirrel *Sciurus vulgaris*, Yellow-necked Mouse *Apodemus flavicollis*, Forest Dormouse *Dryomys nitedula* and Great Spotted Woodpecker, which appear to be important nest predators in BNP (Wesołowski 1985, 2002; Walankiewicz 2002).

Our research showed that nest losses in BNP are much higher than in secondary woodland (Tomiałojć *et al.* 1977, 1984; Tomiałojć 1980; Wesołowski 1983). Breeding loss rates amounted to 60-70% in the majority of species, but some were even higher, up to 76% for Wood Warbler (Wesołowski 1985), 84% for Hawfinch and 97% for Wood Pigeon (Tomiałojć 1997, 1999). Hole-nesters were generally more successful but, even in this group, up to 70% of Collared Flycatcher broods were lost in some seasons (Walankiewicz 2002a). These figures exceeded or were equal to the highest losses recorded for the same species in human-transformed woodland (Tomiałojć 1995). For all species studied, predation was responsible for the majority (64-91%) of total nest loss, and year to year variation in nesting success was due mostly to varying predation rates, even in low caterpillar years (Wesołowski 1983, 1985; Piotrowska & Wesołowski 1989; Tomiałojć 1994). In contrast to other parts of Europe, nests were robbed mostly during the nestling stage. This makes the losses especially costly, since the majority of energy investment necessary for rearing a brood has already been made and effort which could otherwise have been devoted to another nesting attempt has been wasted. Heavy predation continues after the chicks have fledged, when species such as Common Buzzard, Pygmy and Tawny Owls and Pine Marten exploit this easy prey source (Jędrzejewski *et al.* 1994a,b; Zalewski *et al.* 1995; van Manen 2003). As a result of heavy predation, the production of young per breeding pair, and especially the production of young per unit area, is generally low in BNP, sometimes an order of magnitude lower than recorded in other woodlands (Wesołowski 1983; Wesołowski *et al.* 1987; Tomiałojć 1994). Such low productivity, even without heavy mortality in the intervening non-breeding season, leads to fewer would-be recruits the following spring, which in turn result in low breeding numbers. Our data show that high predator pressure and low productivity are essential features of the birdlife in rich primeval forests, including temperate ones.

Nest-sites in primeval forest – looking for safety

The diversified structure of primeval tree-stands, incorporating heterogeneity within the ground layer (e.g. uprooted trees and decaying

logs) and several canopy layers, provides a wide variety of microhabitats, some completely missing in secondary woods, in which to conceal nests. The superabundance of natural holes in old-growth stands enables secondary hole-nesters to choose their preferred hole types. Consequently, BNP provides an opportunity to investigate the role of ancient structures, almost absent in managed stands, as nesting substrate for birds, and also the role of nest location in predator avoidance. In such areas of high predation pressure, inaccessible and/or well-hidden nest-sites have a high adaptive value.

So far, the nest-sites of over 20 species have been studied, including representatives of all the major nesting groups (ground-, crown- and hole-nesters; see Wesołowski & Tomiałojć 1995, Wesołowski 1996, 2002, Tomiałojć 1997, van Manen 2003, Wesołowski & Rowiński 2004, and Czeszczewik in prep.). The results confirm the importance of structures characteristic of primeval forest. Rootpads are regularly used as nest-sites by Wrens, Dunnocks, Robins, Spotted Flycatchers *Muscicapa striata* and three species of thrushes. In riverine stands, Blackbirds locate over 30% and Wrens almost 80% of their nests in them (Wesołowski 1983; Tomiałojć 1993). If other features missing from managed woods (e.g. snags, fallen logs) are added, it appears that 62-70% of Blackbird nests and up to 90% of Wren nests are found in structures usually non-existent in secondary woods. Reflecting the nature of the trees in Białowieża, birds locate their nests much higher above the ground, and often in much larger trees, than in other parts of Europe. For example, Blackbirds breed up to 24 m above ground and woodpeckers up to 35 m above ground (Wesołowski & Tomiałojć 1986; Wesołowski 1989; Tomiałojć 1993; unpubl. data).

All primary hole-nesters, with the exception of Great Spotted Woodpeckers, excavate holes in dead and decaying wood, either in snags or in dead fragments of living trees. Conversely, secondary hole-nesters tend to avoid such holes, and breed mostly in non-woodpecker holes in living trees, which gives some protection from predation by Great Spotted Woodpeckers (Walankiewicz 2002b; Wesołowski 2002). In the case of *Ficedula* flycatchers, however, holes in dead-tree fragments constitute almost half of those used (Wesołowski & Tomiałojć 1995; Wesołowski 1996; Wesołowski & Rowiński 2004). Using holes in living trees has some drawbacks, however, as the nest contents have to be prevented from getting wet. This seems to be the reason why secondary hole-nesters such as tits, flycatchers and Nuthatches pile their holes with moss, leaves and bark flakes respectively (Wesołowski 2002; Wesołowski *et al.* 2002a; Wesołowski & Rowiński 2004).

One general characteristic of the birds in BNP is the large variation in nest-site placement, according to availability and suitability of particular substrates. For example, tree species used by hole-nesters differed across habitat types (Wesołowski 1989, 1996; Wesołowski & Rowiński 2004). Seven main types of nest-site were recognised in Blackbirds; in oak-hornbeam stands, this species used mostly large cavities and holes, limb bifurcations and offshoots on trunks of living trees, while in riverine stands it bred in snags and rootpads to a much greater extent (Tomiałojć 1993). Similar variation was found in Chiffchaffs *Phylloscopus collybita*: in dry habitats, the majority of nests were situated on the ground, among fallen branches, while in riverine stands they were often built at the base of fern and sedge tussocks and among fresh vegetation. In the latter habitat, the nests



Arnoud B. van den Berg

101. White-backed Woodpecker *Dendrocopos leucotos* is one of nine native breeding woodpeckers in Białowieża Forest. This old-growth forest specialist is currently in decline, and will undoubtedly continue to suffer if forestry operations continue in those parts of Białowieża Forest which are not strictly protected.



Gordon Langsbury

102. Tawny Owls *Strix aluco* are the most abundant of nine owl species to have been recorded breeding in Białowieża Forest. Although, like Pygmy *Glaucidium passerinum* and Tengmalm's Owls *Aegolius funereus*, this species will exploit the easy pickings of recently fledged chicks, Tawny Owls are essentially rodent specialists, and the species is prone to suffer during hard winters with heavy snowfall.

were typically situated 5-20 cm above the ground, to prevent flooding (Piotrowska & Wesołowski 1989). Nests in wet riverine forests seem to be least accessible to ground-dwelling predators. Here, visibility is limited by luxuriant ground vegetation, and 'islands' of vegetation are surrounded by mud or water, while movements of predators through the canopy are hindered by relatively large gaps among small-crown trees. Consequently, such woodland should be the safest habitat for breeding birds. This was supported by studies of Wood Warbler, Chiffchaff and Nuthatch, for which breeding losses were lower than in other habitat types (Wesołowski 1985; Piotrowska & Wesołowski 1989; Wesołowski & Stawarczyk 1991), but not by Blackbird, for which losses in riverine and oak-hornbeam habitats did not differ (Tomiałojć 1993). Whereas Chiffchaffs bred at the highest densities in 'safe' habitat, Wood Warblers clearly avoided it, breeding in low and highly unstable numbers (Wesołowski 1985; Tomiałojć & Wesołowski 1990; Wesołowski *et al.* 2002b). This apparently puzzling result can be explained by the fact that Wood Warblers invariably build their nests on the ground, often digging small pits, and so, in wet places, their nests are not protected against soaking and/or inundation (Wesołowski 1985; Piotrowska & Wesołowski 1989). In contrast, Chiffchaff nests in riverine forests were significantly more successful when the nests were surrounded by water, whereas nest losses increased sharply in drought years (Piotrowska & Wesołowski 1989).

Generally, our results so far demonstrate that, of the two means of avoiding nest predation – camouflage and inaccessibility – the latter was more effective in BNP. Most open-nesting species attempted to hide their nests (often they were extremely well camouflaged) as well as making them as inaccessible as possible. Owing to the high diversity of predators, with varied techniques of prey detection and attack, these precautions work only to a limited degree, and it seems that there is no such thing as a truly predator-proof nest location.

Discussion and future prospects

From primeval to secondary forests

The characteristics of bird communities in primeval BNP stands differ markedly from those in man-made forests in BF (and in other temperate areas of Europe), despite the fact that the two forest types are composed largely of the same tree species and inhabited by the same

Table 1. Major postulated differences between primeval and secondary temperate forests (from Wesołowski 2003).

	Primeval	Secondary
Forest size	Large, continuous	Fragmented, isolated
Predator diversity	High	Low
Availability of holes	Abundant	Shortage
Species richness	High	Low
Production of young	Low	High
Density	Low	High
Interspecific competition	Insignificant	Important

bird species (Tomiałojć *et al.* 1984; Tomiałojć & Wesołowski 1990, 2004; Tomiałojć 2000; table 1). The main differences stem from human interference or adaptation, being a combination of: (i) fragmentation, (ii) simplification of forest structure, and/or (iii) predator extermination. Human influence has also led to the extinction of sensitive (e.g. large, specialised) species from managed forests, and thus to declining species richness. By the same token, this has also permitted more productive populations of surviving species in managed stands, with populations sometimes increasing to levels where limitation by resources and interspecific competition probably becomes significant (Tomiałojć 1980, Wesołowski 1983). The high productivity and high bird densities in secondary woodland seem to be characteristic of all habitats where predator pressure is reduced (e.g. islands, some human settlements) and are not unique to temperate-forest bird communities.

The conservation value of Białowieża Forest

Our data show the immense value of BF both for bird conservation and as a reference point for other biological and forestry research, at both community and ecosystem levels. Studies of other groups (Jędrzejewska & Jędrzejewski 1998; Gutowski & Jaroszewicz 2001; Faliński 2002) also highlight BF as an exceptional biodiversity hot-spot; it supports approximately 990 species of vascular plants, 200 species of mosses, 400 species of lichens, well over 3,000 species of fungi, over 9,280 species of insects, and 58 species of mammals, including Wisent *Bison bonasus*, the largest terrestrial European mammal. Especially important are the thousands of species of micro-organisms, plants, invertebrates and vertebrates dependent on decaying timber. Any plant and animal communities in secondary woodland cannot be properly evaluated without reference to a pristine situation; consequently, BNP is not a living museum, but a dynamic natural system. If we wish to understand the past and future evolution of European forests, and if we want to properly restore a part of Europe's natural heritage, BF must be preserved.

Białowieża Forest – will it survive?

The data presented so far may have implied that the whole BF remains in a primeval state, but this is sadly not so. Only about 13% is free from any management, where natural processes can operate without human intervention. In other areas, including nature reserves and large sections of the national park, managers are permitted to interrupt natural ecological processes.

What has been the impact of humans on BF and its avifauna? We know that humans had penetrated BF by the Neolithic era, but permanent colonisation began in the fifteenth century, after it became a royal hunting estate. It served this function until the First World War, after which intensive timber exploitation began. Between the fifteenth and nineteenth centuries, the area of BF was reduced slightly, as some open meadows and villages surrounded by arable fields were established inside the formerly unbroken forest tract (fig. 1). Nonetheless, with the exception of some fairly small-scale deforestation, direct human impact on the remaining forest stands was limited (Faliński 1968; Tomiałojć & Wesołowski 2004). Only the last 90 years of commercial logging have resulted in large-scale habitat changes. During this time, forestry operations have affected the whole BF (except BNP), resulting in a number of changes in its structure, not all of which are completely independent: (1) the appearance of new habitats – clear-cuts and young plantations are qualitatively different from tree-fall gaps (Fuller 2000); (2) 'rejuvena-



Reston Kilgour

103. In many parts of Europe, the numbers of Eurasian Nuthatches *Sitta europaea* are affected by autumn seed supplies, often in conjunction with winter weather conditions. In Białowieża Forest, this relationship is much less apparent, perhaps because of the diversity of tree species, which reduces the dependency on one or two key species.

tion' – over 70% of primeval old-growth stands have disappeared; (3) 'coniferisation' – widespread planting of conifers has resulted in a 65% reduction of the area formerly occupied by oak-hornbeam stands; (4) spatial unification – a fine-grained mosaic of diversified species/age-groups has been replaced by blocks of even-aged monocultures (Bobiec *et al.* 2000); (5) a severe reduction of the amount of dead wood/fallen trees owing to 'sanitary cuttings' – a five-fold reduction in the number of large dead trees and an almost 100-fold reduction of the dead-wood volume (Bobiec 2002; Walankiewicz *et al.* 2002) and; (6) insularisation of the once continuous old-growth forest tract.

At the level of the whole local avifauna, the overall effect of human transformation of BF is a conspicuous increase in the number of bird species. The breeding species native to the forest, i.e. the ones that could have bred in BF 200-400 years ago, before the first agricultural clearings and human settlements started to appear, once amounted to 135-140 species, 111 of which were forest and forest-edge species (Tomiałojć & Wesołowski 2004). The remaining ones occurred in fen marshes within the forest. Creation of new habitats allowed the colonisation of BF by an additional c. 40 non-forest species, bringing the total number of breeders to 178, and the total number of recorded species to 251 (Tomiałojć 2001; box 1). Yet BF still retains most of its original avifauna; only 4-6 species ceased to breed during the second half of the twentieth century, and only one of them – Peregrine Falcon *Falco peregrinus* – was a true forest inhabitant. However, several other species are currently on the verge of local extinction. Capercaillie *Tetrao urogallus* has already vanished from the Polish part of the forest (Wesołowski *et al.* 2003), while the numbers of 21 other species remain below 20 breeding pairs each (Tomiałojć 1995) and populations of old-growth specialists, such as White-backed Woodpecker *Dendrocopos leucotos*, are markedly reduced. If current trends continue, we may anticipate more local extinctions in the near future.

Taking tree-covered areas alone, the extensive habitat transformations affected the distribution and numbers of birds in a diverse fashion. There are some winners, such as those species requiring open or open/low vegetation (e.g. Yellowhammer *Emberiza citrinella*, Lesser Whitethroat *Sylvia curruca*, Red-backed Shrike *Lanius collurio*), or dense thickets (e.g. Willow Warbler *Phylloscopus trochilus*), which in primeval forest are confined to the edges (Wesołowski *et al.* 2003). Others, like Hazel Grouse *Bonasa bonasia* and Chiffchaff, breed in higher densities in the managed forest (Piotrowska & Wesołowski 1989; Wesołowski *et al.* 2003). There are losers as well; these are specialists dependent on resources abundant only in the old-growth forest and

which struggle to exist in habitats created by forestry operations, e.g. secondary hole-nesters and some woodpeckers. The distribution and numbers of White-backed Woodpecker, a species dependent on dead deciduous wood, have been severely restricted in managed areas, by c. 65-75% of the presumed pre-management level (Wesołowski 1995). Outside BNP, numbers of Three-toed Woodpeckers *Picoides tridactylus*, a species dependent on dying and dead spruces, may have been reduced even more (Wesołowski *et al.* 2003, unpubl. data). The removal of almost three-quarters of former old-growth stands from managed areas (see above) has inevitably had a detrimental impact on the numbers and distribution of secondary hole-nesters, but we have no quantitative data to prove it. Such birds are critically dependent on the retention of old-growth stands, but these are exactly the fragments on which recent logging operations are concentrated. If these operations continue, these species will vanish from the managed part, and only a remnant population, with poor prospects for long-term persistence, would survive in BNP. This area is too small to preserve features of the primeval forest on a scale sufficient to safeguard the continued operation of natural ecological and evolutionary processes. It is too small to harbour substantial populations of the majority of forest birds; the numbers of over 70% of species in extended BNP remain still below 100 breeding pairs (Wesołowski *et al.* 2003).

Scandalously, the importance of preserving the whole BF as a national park is not recognised by the authorities. Against all the evidence, and legal obligations, they plan to continue logging at a rate of approximately 150,000 m^3/yr (management plans accepted in 2003, to be in force until 2011). As plantation areas are still too young, logging will be concentrated in the old-growth patches of natural origin (still covering about 20% of BF outside BNP). Even the existing nature reserves are not excluded from logging. The result will be a continued loss of the natural forest remnants, while the remaining old-growth patches outside the strictly protected core area will be gone within the next decade.

This grim scenario need not, however, become a reality. If the Polish Government can be convinced that protection of this forest tract as a whole (a mere 0.6% of the entire country's woodland), with preservation of its unique natural heritage for future generations, is the only acceptable solution, far exceeding the short-term benefits from timber extraction, then there would be some brighter prospects for the BF and its birds. Support from birdwatchers and conservationists in the West in our struggle to preserve this unique forest is vital, not least in communicating the importance of the forest to EU decision-makers. Another way of supporting BF is to visit the area, since ecotourists will help to convince local people that switching from logging to providing tourist facilities would be more profitable. Visit BF in the breeding season and you will not only see this magnificent habitat at its best and numerous bird species absent from west European forests (see box 1), but also, with a little luck, Wild Boar, Wisent, Eurasian Beaver *Castor fiber*, Elk *Alces alces*, Wolf or Lynx in their natural environment.

Box 2. Visiting the Forest.

Białowieża is situated 190 km east of Warsaw, and is easily accessible by car, via Siedlce and Hajnówka, a township on the outskirts of BF (fig. 1). One can also travel to the area by train from Warsaw to Hajnówka, changing at Siedlce. Convenient tourist facilities are available at the Białowieża village (the closest settlement to BNP), where there are hotels of a good standard (for example, Hotel Bialovieski, tel: ++48856812022, and Hotel Zubrowka, tel: ++48856812303; see also: www.bialowieza.org.pl), as well as cheaper private rooms (contact the PTTK tourist organisation: www.pttk.bialowieza.pl or tel: ++48856812295). There are several places where traditional hunters' food is served, which may include venison, wild boar, elk/moose and even bison (when some weak individuals are eliminated, legally, from the herd). English-speaking guides, specialising in nature- or birdwatching-tours may be hired, while bicycles for rent or horse-drawn wagons are available as well. Facilities are also available at Narewka village, in the north, close to Siemianówka dam reservoir. To enter the strictly protected reserve, it is necessary to obtain a permit or to be accompanied by a local guide; contact the Białowieża National Park administration (www.bpn.com.pl, e-mail: infobpn@bpn.com.pl, tel: ++48856812901).

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Birds and windfarms:

what are the real issues?

Steve Percival



Dan Powell

ABSTRACT Windfarms are becoming increasingly common in Britain, and concerns about their possible effects on birds are increasing too. There are two main ways in which windfarms can affect birds: by collision with the turbines themselves, and through disturbance from a zone around them. Although no significant ornithological problems have yet been recorded at existing windfarms in the UK, there have been serious problems at windfarms in other countries, notably with birds of prey, and these are discussed. The evidence shows that birds and windfarms can coexist if the windfarm site is located appropriately. In particular, windfarm development should avoid areas: (i) with high-density raptor populations, where collisions could be significant; (ii) with high densities of other species vulnerable to a low level of additional mortality, and whose susceptibility to collision may be high; and (iii) where disturbance could potentially displace birds from important feeding or nesting habitats. It is vital to consider the potential problems of collisions and disturbance at windfarms on a case-by-case basis.

Windfarms are becoming increasingly common in the British countryside and many more are likely to be constructed during the next few years if the Government's renewable energy targets are to be met. At the time of writing, there are some 94 wind-energy projects connected to the UK national grid, comprising some 1,186 turbines with a capacity of 890 MW (www.bwea.com). Another 18 projects are under construction,

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and many more are presently being assessed by the planning system. The increase in the deployment of wind turbines is a global phenomenon; for example, Germany now has an operating wind-power capacity of over 15,000 MW, that in Spain is 6,600 MW and that in the USA is 6,400 MW (Milborrow & Tishler 2004). It is widely acknowledged by the Government, national nature conservation agencies and the RSPB that wind energy can make a positive contribution to combating climate change.

One of the main aims of the wind-power industry is to deliver less environmentally damaging energy. It is, therefore, in the interests of both windfarm developers and those seeking to protect bird populations that windfarms should be located away from areas where such developments may have a deleterious impact. Furthermore, the windfarm industry has legal obligations, via the European Directives on Habitats and Birds, to the network of protected sites and associated designated species. At the same time, given the environmental benefits that wind energy can deliver, it is also important that bird issues should not constrain wind-energy development unnecessarily in those areas where it is unlikely to cause significant problems.

All the projects in the UK have been, and will continue to be, subject to comprehensive environmental assessment, but, with the proposed expansion in windfarm capacity, might we be looking at a conflict between the industry and British bird populations in the near future? In the UK, there have been no significant ornithological problems reported at windfarms to date, mainly as a result of their location in areas away from important bird populations (SGS 1996; Langston & Pullan 2003). A range of sites have been developed, in coastal, upland and farmland habitats, with farms ranging in size from one to 100+ turbines.

This paper focuses chiefly on onshore windfarms, as it is at these that most of the research into the effects on birds has been carried out. Nonetheless, offshore windfarms are becoming a particularly important issue in the UK, as there are plans for several much larger-scale developments than have been constructed onshore (for details, see www.crownestate.co.uk).

This currently positive situation in Britain is, unfortunately, not always replicated elsewhere. Two windfarm areas in particular have become synonymous with ornithological problems: Altamont Pass, in California, and Tarifa, in southern Spain. Large numbers of raptors in particular have collided with wind turbines at these sites, including substantial numbers of Golden Eagles *Aquila chrysaetos* at Altamont (Orloff & Flannery 1992; Hunt *et al.* 1998; Thelander *et al.* 2003) and Griffon Vultures *Gyps fulvus* at Tarifa (SEO/BirdLife 1995; Janss 2000; Barrios & Rodriguez 2004). Large, long-lived species such as these are often susceptible to even small increases in mortality, so there is potential here for significant population effects. In both these areas, the scale of the windfarm development has clearly been inappropriate given the local bird populations. It is important that such mistakes are not repeated elsewhere, and that we understand the fundamental char-

Box 1. Information on birds and windfarms.

There is a range of sources of information on how birds have been affected by windfarms, including several reviews of the topic dating back more than a decade. These all provide useful information about the state of knowledge at the time that they were compiled. The following make a good start for anyone looking further into the potential effects of wind turbines on birds:

Crockford (1992) – a review carried out for JNCC;
Gill *et al.* (1996) – a review carried out for Scottish Natural Heritage;
SGS Environment (1996) – a review carried out for the UK Department of Trade and Industry (DTI) Energy Technology Support Unit;
Percival (2000) – a review for *British Wildlife*;
Erickson *et al.* (2001) – a review of the collision rates at windfarms in the USA for the US National Renewable Energy Laboratory;
Percival (2001) – a review of the potential ornithological impacts of offshore windfarms for the DTI Energy Technology Support Unit;
Kingsley & Whittam (2003) – compiled by Bird Studies Canada for Environment Canada (Canadian Wildlife Service);
Langston & Pullan (2003) – a review compiled by RSPB and its BirdLife partners for the Bern Convention.

acteristics of the bird populations in such locations and how potential problem sites can be identified (and avoided) in the future.

There are two main ways in which a windfarm might potentially affect bird populations. The first of these, often intuitively assumed to be the major risk, is that birds may fly into the turbines, principally the rotating blades, and be killed. Secondly (but potentially at least equally important in an ecological context), birds can be displaced from an area around the wind turbines through disturbance, resulting in effective habitat loss. Direct habitat loss from windfarm construction is usually small-scale and unlikely to be significant, although this might happen if a particularly scarce and important habitat was affected, or if there was potential to affect a wider area (e.g. through disrupting the hydrology of a peatland system).



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104. Tarifa, in southern Spain, is one of the windfarms which has become infamous for the number of bird collisions, notably of Griffon Vultures *Gyps fulvus* and other raptors. The scale and nature of windfarm development here (700 turbines, packed close together, and of an old design with latticework towers, and high-speed rotors close to the ground) was clearly inappropriate given the characteristics of the local bird populations.

Collision risk

What are the characteristics of Altamont Pass and Tarifa, where there have been major bird collision incidents, and why have they caused such problems? The number of collisions per turbine in these areas was actually quite low (considerably less than one bird per turbine per year; table 1), but taking each area as a whole, the number of collisions, particularly of protected species, was significant. Both of these windfarm areas are characterised by large numbers of turbines (c. 7,000 at Altamont, c. 700 at Tarifa), which are predominantly of an old design (small turbines, with high-speed rotors relatively close to the ground, and with the turbines often packed close together). Many also have lattice towers, which provide many perches, thus attracting birds, particularly raptors, into the collision-risk zone. Both areas support high densities of birds which are susceptible to collisions with turbines, and species for which a small increase in mortality has the potential to have an impact at the population level. Finally, but of particular importance, both sites support important food resources for key bird species. For example, at Altamont, the bases of the turbines have proved ideal for small burrowing mammals such as gophers (Geomyidae), attracting raptors to feed within the collision-risk zone (Thelander *et al.* 2003).

How widespread is the problem of collision? In table 1, a range of studies of bird collisions are summarised (focusing particularly on sites where problems have occurred, but also including sites where they have not) giving, where possible, information on the size and type of wind turbines, the birds' exposure to collision risk (numbers flying through at rotor height), the incidence of collision, and an assessment of whether this might result in any population impact. These have been summarised into broad classes to illustrate the main overall patterns.

A recent study in Navarre, in northern Spain, has highlighted the susceptibility to collision of Griffon Vultures in that area too (Lekuona 2001). Collisions between large raptors and wind turbines have also been reported from other regions, though not in such high numbers; for example, two White-tailed Eagles *Haliaeetus albicilla* collided with wind turbines in northern Germany recently (Krone & Scharnweber 2003). No other 'Altamont-type' problems have been reported else-

Table 1. Bird-windfarm collision studies: summary of findings.

Species group	Sites studied	Windfarm size	Turbine type	Exposure to collision risk	Incidence of collision	Population effect
Divers	Burgar Hill [1,2]	S	S/M	M	Nil	No
Cormorants	Buffalo Ridge [3]	VL	M	L	Nil	No
	Blyth [4,5]	S	S	L	VS	No
Swans	Yukon [6]	S	S	S	Nil	No
	Urk [7]	M	S	M/L	VS	No
Geese	Buffalo Ridge [3]	VL	M	L	Nil	No
	Klondike [9]	M	M	M	S	No
	Kreekrak [12]	S	S	M	S	No
	Gotland [10]	L	M	L	Nil	No
	Urk [7]	M	S	M	Nil	No
Ducks	Blyth [4,5]	S	S	L	S	No
	Buffalo Ridge [3]	VL	M	L	VS	No
	San Gorgonio [11]	VL	S	-	VS	No
	Kreekrak [12]	S	S	L	M	No
Eagles,	Altamont [11,13]	VL	S	L	S	Likely
vultures, hawks	Tehachapi [11]	VL	S	-	VS	Possible
	San Gorgonio [11]	VL	S	-	VS	No
	Tarifa [14,16]	VL	S	L	VS	Possible
	Navarre [15]	VL	M	L	S	Possible
Harriers	Buffalo Ridge [3]	VL	M	M	Nil	No
	Altamont [11,13]	VL	S	L	VS	No
	Foot Creek Rim [8]	L	M	-	VS	No
Falcons	Altamont [11,13]	VL	S	L	S	Possible
	Burgar Hill [1]	S	S	S	VS	No
	Novar [17]	M	M	M	VS	No
	Tehachapi [11]	VL	S	-	VS	No
	Tarifa [14,16]	VL	S	L	VS	Possible
Upland	Buffalo Ridge [3]	VL	M	S	VS	No
gamebirds	Novar [17]	M	M	S	VS	No
	Tehachapi [11]	VL	S	-	VS	No
Owls	Altamont [11,13]	VL	S	L	VS	Possible
	San Gorgonio [11]	VL	S	-	VS	No
	Tehachapi [11]	VL	S	-	VS	Possible
Waders	Kreekrak [12]	S	S	L	S	No
	Gotland [21]	L	M	L	VS	No
	Blyth [4,5]	S	S	M/L	VS	No
	Oosterbierum [18]	M	S	M/L	VS	No
	Ovenden Moor [19]	M	S	L	VS	No
	Buffalo Ridge [3]	VL	M	L	VS	No
Gulls	Blyth [4,5]	S	S	L	M	No
	Kreekrak [12]	S	S	L	M	No
	Zeebrugge [20]	M	S/M	L	L	Possible
	Buffalo Ridge [3]	VL	M	L	Nil	No
Terns	Zeebrugge [20]	M	S/M	L	M	Possible
	Blyth [4,5]	S	S	M	Nil	No
Passerines	Blyth [4,5]	S	S	M/L	Nil	No
	Buffalo Ridge [3]	VL	M	L	M	No
	Oosterbierum [18]	M	S	L	L	No

KEY

Sources: 1. Meek *et al.* 1993; 2. Haworth 2002; 3. Johnson *et al.* 2000; 4. Still *et al.* 1995; 5. Painter *et al.* 1999; 6. Mossop 1998; 7. Winkelman 1989; 8. Young *et al.* 2003; 9. Johnson *et al.* 2003; 10. Percival 1998b; 11. Erickson *et al.* 2001; 12. Musters *et al.* 1995, 1996; 13. Thelander *et al.* 2003; 14. SEO/BirdLife 1995; 15. Lekuona 2001; 16. Janss 2000; 17. Bioscan 2001; 18. Winkelman 1992a; 19. EAS 1997; 20. Everaert *et al.* 2002; 21. Percival 2000.

Windfarm size: VL = very large (>200 turbines); L = large (50-200 turbines); M = medium (10-50 turbines); S = small (<10 turbines).

Turbine type: L = large (>1.5 MW); M = medium (500 KW-1.5 MW); S = small (<500 KW).

Exposure to collision risk (based on number of flights at rotor height/in proximity to turbines per year: L = large (>10,000); M = medium (1,000-10,000); S = small (<1,000).

Incidence of collision: L = large (>10/turbine/yr); M = medium (1-10/turbine/yr); S = small (0.1-1/turbine/yr); VS = very small (<0.1/turbine/yr).

Population effect: determined on the basis of the total numbers killed in relation to the population dynamics.

where in North America, even at other large windfarms or where large numbers of birds have been passing through the windfarm area (Erickson *et al.* 2001; Kingsley & Whittam 2003). Furthermore, studies at upland sites in the UK have generally reported extremely low collision rates, with some finding no collisions at all (Meek *et al.* 1993; Tyler 1995; EAS 1997; Bioscan 2001). This probably reflects the generally low bird densities present in these areas, though it should be noted that, so far, little work has been published from those UK upland windfarm sites that may pose a significant risk to larger raptors such as Golden Eagle or Hen Harrier *Circus cyaneus*, so possible impacts on species such as these are not yet well understood in Britain.

Studies of bird collisions at coastal windfarms have generally reported rather higher numbers of collisions than in upland areas, which probably reflects generally higher bird densities on the coast. Studies at Blyth Harbour, Northumberland (Still *et al.* 1995; Painter *et al.* 1999), and at Zeebrugge harbour, Belgium (Everaert *et al.* 2002), revealed collision rates in excess of one bird per turbine per year, with most casualties at both sites being gulls (Laridae). The number of collisions estimated in the Zeebrugge study were particularly high (an average of 23 birds per turbine per year at one of the three windfarms studied; rate per turbine varied within and among sites, from 0 to 125 birds per turbine per year, which highlights the high variability within and among windfarms).

Care is needed when interpreting quoted collision rates. Collisions are intrinsically rare events, and are difficult to measure accurately. Scavengers may remove collision victims before they are detected, and observers may miss some of the corpses, particularly of smaller birds. It is important that any study should be designed to take into account the local scavenger populations, and attempt to quantify scavenger removal and observer efficiency. Studies without such calibration can provide useful information, as long as it is appreciated that collision rates in such circumstances are minimum values and may underestimate true values. Similarly, quoted collision rates obtained by extrapolation and using large correction factors, such as in the Zeebrugge and Navarre studies (where only a low percentage of the estimated collisions were actually detected), also



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105. Blyth Harbour windfarm, Northumberland, where collision rates in excess of one bird per turbine per year have been documented, with most of the casualties being gulls (Laridae). See text and table 1.

need to be treated with caution. Ideally, it is preferable to adjust the methodology to take into account more rapid scavenger removal or low observer efficiency rather than applying a large correction factor. Caution is also needed when interpreting extrapolations of results; for example, if a study has been carried out over a few weeks, the observed collision rate could not justifiably be extrapolated to a whole year.

Collision risk depends on species, circumstances and any impediments to flight control. For example, a key factor in many collisions involving Griffon Vultures at Tarifa was the location of some turbines on ridges critical for lift by the vultures, which were unable to gain sufficient flight control to avoid the turbines (Barrios & Rodriguez 2004). Overall, however, studies using radar-tracking have shown that birds are generally able to avoid collisions with wind turbines and do not simply fly into them blindly. Dirksen *et al.* (1998) found that Common Pochards *Aythya ferina* and Tufted Ducks *A. fuligula* regularly flew through a windfarm in The Netherlands at night under moonlight, but flew around the turbines at a greater distance from them when dark and foggy. Reported collision rates are typically in the range of 1 in 1,000-10,000 bird flights through a windfarm, even in studies such as that at Zeebrugge, where relatively high numbers of collisions have been reported. In some cases, they are considerably lower, such as at the offshore windfarm at Utgrunden, Sweden, where over 500,000 Common Eider *Somateria mollissima* flights through the windfarm study area have been observed without a single collision being seen (Pettersson & Stalin 2003). Studies by Winkelman (1992a), however, indicated that most collisions occurred during periods of poor flight and sight conditions, which hamper studies of bird behaviour in relation to turbines.

It has been suggested that birds at windfarms may be susceptible to catastrophic collision events, as has been found with nocturnal landbird migrants at some large communication towers in the USA (Manville 2001). So far, however, there are no documented events on such a scale from any windfarm and there have been only occasional records of more than a handful of collisions occurring over a short time, almost all referring to nocturnal passerine migrants. For example, Kingsley & Whittam (2003) cite just four examples in their review: 28 night migrants at the 44-turbine site at Mountaineer, West Virginia (Kerlinger 2003); 14 collisions with two turbines at Buffalo Ridge (Johnson *et al.* 2002); an estimated 170 collisions with 18 turbines at Oosterbierum during seven nights of peak migration; and 43 birds at one turbine on Gotland (Karlsson 1983). All figures refer to a single night unless stated.

One potentially major problem in assessing the possible effects of new windfarm developments is a lack of information about the particular species which occur at that site. An approach using the precautionary principle, which has been used in some cases, is to look at the relative susceptibility of those species to other structures, such as power lines. Any risk assessment can usefully draw on relevant available information, such as that from collision with other structures, particularly so in the absence of good, quantitative data from windfarms. Such comparisons may, however, be of limited value where studies are not directly comparable; for example, geese are vulnerable to power-line collisions, but the few quantitative studies of goose collisions at windfarms suggest that such events are rare indeed, even when large numbers are potentially at risk (table 1). A better approach may be to consider the ecological characteristics of the species involved, comparing the species with those which *have* been studied, and in particular those for which problems have occurred. The best available data could then be used to establish a worst-case analysis and, in particular, gauge the likelihood of any population impact. An impact at the population level would require a combination of a sufficient number of flights at rotor height, and species which are both susceptible to collision and ecologically sensitive to additional mortality.

In considering the potential impact of windfarms, it is useful to set the resulting mortality into the overall context of bird-collision rates with other man-made structures. Erickson *et al.* (2001) produced the following estimates of bird-collision mortality in the USA:

- Vehicles: 60-80 million
- Buildings and windows: 98-980 million
- Power lines: from tens of thousands to 174 million
- Communication towers: 4-50 million
- Wind generation facilities: 10,000-40,000

Erickson *et al.* (2001) concluded that, even if the number of wind turbines in the USA

increased by two orders of magnitude (to over one million turbines), they would still be likely to cause no more than a few per cent of all collision deaths related to human structures. As highlighted above, however, it is a few sensitive species which cause most of the concern, those for which even a small additional mortality attributable to collision with wind turbines may be significant.

Disturbance

The second potentially important effect of windfarms on birds is disturbance, since windfarm construction can bring a range of potentially disruptive activities. While the site is under construction, there is likely to be an increase in human presence, vehicle movements on site and noise levels. The same is true of the decommissioning phase (wind turbines are typically given planning permission for 20-25 years, after which they should be dismantled and removed from the site). During the operational phase, the physical presence of new structures may make some species reluctant to use the ground around them, while there is noise generated by the turbines and human presence (albeit usually low) through maintenance activities. Any or all of these could potentially contribute to displacement of birds from a zone around the turbines, effectively resulting in habitat loss.

There have been numerous studies of bird

Table 2. Bird-windfarm disturbance studies: summary of findings.

Species group	Sites studied	Habitat	Windfarm size	Turbine type	Disturbance distance
Cormorant	Blyth [1]	Coastal	S	S	None *
Swans	Urk [3]	Farmland and coastal	M	S	None (Bewick's), 300 m (Whooper)
Geese	Germany [4,5]	Farmland	M	S/M	Up to 600 m
	Urk [3]	Farmland and coastal	M	S	None
	Denmark [6]	Farmland	L	M	1-200 m
	Gotland [7]	Coastal marsh	L	M	0-25 m
	Toronto [8]	Parkland	S	M	None
Ducks	Tunø Knob [9]	Offshore	M	M	None
	Utgrunden [10]	Offshore	S	L	None
	Urk [3]	Coastal	M	S	Up to 300 m
Raptors	Bryn Tytli [16]	Upland moor	M	S	None
	Altamont [17]	Grassland	VL	S	None
Waders: breeding	Ovenden Moor [11]	Upland moor	M	S	None
	Various UK sites [12]	Upland	S/M	S/M	None
	Gotland [22]	Coastal and farmland	L	M	None
	Oosterbierum [15]	Lowland farmland	S	S	Up to 300 m
	Germany [13]	Lowland farmland	S/M	S/M	Up to 200 m
Waders: non-breeding	Blyth [1]	Coastal	S	S	None
	Tjaereborg [2]	Farmland	S	M	800 m
	Zeebrugge [14]	Coastal	M	S/M	Up to 250 m
	Oosterbierum [15]	Farmland	M	S	500 m
Gulls	Tjaereborg [2]	Farmland	S	M	800 m
	Blyth [1]	Coastal	S	S	None
Terns	Zeebrugge [14]	Coastal	M	S/M	None
	Blyth [1]	Coastal	S	S	None
Passerines	Various UK sites [12]	Upland	S/M	S/M	None
	Buffalo Ridge [18]	Grassland	VL	M	1-200 m
	Bryn Tytli [19]	Upland moor	M	S	None
	Burgar Hill [20]	Upland moor	S	S	None
	Novar [21,23]	Upland moor	M	M	None

KEY

Sources: 1. Still *et al.* 1995; 2. Pedersen and Poulsen 1991; 3. Winkelman 1989; 4. Kowallik & Borbach-Jaene 2001; 5. Kruckenberg & Jaene 1999; 6. Larsen & Madsen 2000; 7. Percival 1998a; 8. James 2003; 9. Guillemette *et al.* 1998, 1999; 10. Pettersson & Stalin 2003; 11. Bullen Consultants 2002; 12. Thomas 1999; 13. Ketzenberg *et al.* 2002; 14. Everaert *et al.* 2002; 15. Winkelman 1992b; 16. Green 1995; 17. Thelander *et al.* 2003; 18. Leddy *et al.* 1999; 19. Phillips 1994; 20. Meek *et al.* 1993; 21. Bioscan 2001; 22. Percival & Percival 1998; 23. Percival 2002.

Windfarm size: VL = very large (>200 turbines); L = large (50-200 turbines); M = medium (10-50 turbines); S = small (<10 turbines).

Turbine type: L = large (>1.5 MW); M = medium (500 KW-1.5 MW); S = small (<500 KW).

Disturbance distance: 'None' indicates no significant disturbance effect; * disturbance noted during construction but not operation.

disturbance at windfarms, one of the more comprehensive being that by Larsen & Madsen (2000) in Denmark. They looked at the effects of a large number of wind turbines (61) on the feeding distribution of wintering Pink-footed Geese *Anser brachyrhynchus*. They found that the geese maintained a distance of about 100 m from single turbines or rows of turbines, and a distance of about 200 m from clusters of turbines. This disturbance effect was of a similar magnitude to that of the other landscape features in the area, such as hedgerows, roads and buildings. This landscape-scale approach could be useful in planning other windfarms in similar situations, and in particular for locating turbines in areas which are already disturbed, to reduce their potential impact.

In many cases, including studies at upland, coastal and offshore windfarms, no significant disturbance effect has been detected (table 2). In other studies, however, a reduction in bird numbers has been reported as far as 800 m from turbines outside the breeding season, and up to 300 m from turbines for breeding birds. As for the impact of collision, care needs to be taken when interpreting the results. In cases where no significant effect is found, the sample size and power of the statistics used need to be considered carefully. In addition, several studies have unwittingly incorporated confounding factors such as increased human disturbance, a lack of proper habitat data to determine the birds' preferences in relation to windfarm location, and a lack of proper statistical testing or experimental design. The variability in results is exemplified by two studies on the Russian Barnacle Goose *Branta leucopsis* population. One was carried out on the birds' spring staging grounds in Gotland, Sweden, where they fed in close proximity to wind turbines (to within 25 m) with no significant disturbance effect (Percival 1998a). A study of the same population on their wintering grounds in Germany, however, found that few geese fed within 350 m of wind turbines, and a reduction in numbers up to 600 m from the turbines was evident (Kowallik & Borbach-Jaene 2001). The most likely explanation for such different results is that geese avoid wind turbines when there is easy access to alternative feeding habitat, but will be less selective when resources are limited. On Gotland, the geese fed primarily on saltmarsh, which had a restricted distribution within the study area, mostly in close proximity to the wind turbines. In contrast, the birds in Germany were feeding on farmland, where alternatives would have been more freely available. Similar results, where birds become more tolerant of disturbance as resources become scarcer, have been found in other studies of disturbance of wintering waterfowl (e.g. Percival 1993). Other results have suggested, however, that disturbance can lead to reduced breeding productivity (e.g. Madsen 1995), reduced survival, or a reduction in available habitat, so it remains possible that disturbance may be significant for some species in certain situations (see Woodfield & Langston 2004 for review). Overall, in terms of the ecological consequences of potential disturbance effects, these results suggest that birds may either move to nearby alternative food sources, if available, or be more tolerant of the presence of the wind turbines if not. In existing studies, substantial displacement by wind turbines seems to have occurred primarily in farmland habitats, where there would typically be alternative feeding areas within easy reach.

Studies at upland windfarms have not shown any major disturbance impact on waders, grouse or passerines (although, as emphasised above, survey results may be incon-



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106. The construction phase at Bowbeat windfarm in the Scottish Borders.



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107. Studies of Barnacle Geese *Branta leucopsis* on their wintering and spring staging grounds suggest that feeding birds will avoid wind turbines if there are easily accessible alternative food resources, but will be less selective if those resources are more limited.

clusive or limited by small sample size). The effects on raptors in upland habitats are less well known. Several species (including Golden Eagle and Hen Harrier) forage in high densities in windfarm areas in the USA, even hunting in close proximity (<50 m) to wind turbines at Altamont (Thelander *et al.* 2003), which suggests that disturbance during the operational phase is not such a problem as collision risk for these species.

The maximum distance over which birds have been reportedly affected by disturbance from an operational windfarm is 800 m (Pedersen & Poulsen 1991), although this single, large experimental turbine at Tjaereborg, Denmark, was operating in an atypically intermittent way and sited in less attractive habitat relative to the rest of the study area (which the study did not take into account). Two studies in Germany have reported goose disturbance up to 600 m from windfarms (Kruckenberg & Jaene 1999; Kowallik & Borbach-Jaene 2001). Though the results from these studies would not necessarily be generally applicable (even to the same goose population in other circumstances – see above), 600 m would perhaps make a more appropriate worst-case disturbance scenario (given that it is based on more reliable studies), at least for onshore windfarms. With rather less information available from offshore sites, a more cautious approach may be appropriate, given the (generally) different species involved and the often much larger proposed scale of development.

Wind turbines also have the potential to disrupt bird flight-lines. Several studies have shown that some species alter their route to avoid flying through windfarms, for example Tufted Duck and Common Pochard at Lely in The Netherlands (Dirksen *et al.* 1998), Common Eiders at Tunø Knob in the Danish Baltic (Tulp *et al.* 1999), and Common Eiders at Utgrunden in the Swedish Baltic (Pettersson & Stalin 2003). While this may reduce collision risk, it could also result in the windfarm acting as a barrier to bird movements. Such effects are not, however, universal and, for example, at Zeebrugge, large numbers of birds regularly fly through the windfarm without diverting around it (Everaert *et al.* 2002). For a small windfarm, the ecological consequences of such a barrier are unlikely to be a problem, with minimal diversion distances involved. For larger sites, however, particularly some of the offshore sites currently being proposed, this does have the potential to be more important, for example by increasing energy expenditure or disrupting ecological links between feeding and roosting/loafing areas.



Steve Percival

108. Offshore wind turbines at Tunø Knob, in the Danish Baltic Sea.

In summary, there are circum-

stances when the presence of a windfarm can cause disturbance, and circumstances when this has the potential to be ecologically significant. Displacement distances are clearly variable, even within the same bird population, but tend to be related to the availability of alternative resources nearby. An increased tolerance to disturbance when resources are scarce may reduce the potential for significant, long-term impacts, though further research is needed to confirm this. It is still necessary to consider new windfarm proposals on a case-by-case basis, and to assess the patterns of resource availability and the potential loss through disturbance for each.

Conclusions

Clearly, windfarms have the potential to cause significant problems for bird populations. Furthermore, every windfarm situation is different and, with the industry still at a relatively early stage of development, situations where previous research does not provide clear guidance as to whether a particular development will cause problems for local bird populations are commonplace. Nonetheless, problems have so far occurred at only a small number of sites, outwith the UK, and are highly site- and species-specific. To avoid problems with birds, the key factor when developing future sites should be the location, and it is clear from the evidence available that birds and windfarms *can* coexist where windfarms are sited appropriately. In particular, it is important to avoid developing windfarms at sites (a) with high-density raptor populations, where collisions could be significant; (b) with high densities of other species vulnerable to a low level of additional mortality, where their susceptibility to wind-turbine collision may be high; and (c) where disturbance could potentially displace birds from important habitats/sites (e.g. within 600 m of important feeding/roosting areas unless there is good evidence that the species would not be affected).

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Conservation research news

Compiled by Richard Gregory, Chris Bailey and Ian Johnstone

The heat is on

While there is broad scientific consensus about the likely impacts of global warming on climatic conditions around the globe, the consequences of these changes for wildlife are much less clear. Some of the best evidence we have for possible impacts comes from long-term studies; for example, BTO data show that most British birds are now nesting earlier in response to warmer springs. A novel study, by Julliard *et al.* (2004), which combined bird productivity and monitoring information, has taken our knowledge a step forward and produced striking findings. Taking the opportunity of an exceptionally warm spring in France in 2003 as a natural simulation of possible future climate, Julliard *et al.* analysed bird productivity using the long-term French capture-recapture data alongside analysis of long-term trends. Two-thirds of the 32 common species studied had above-average productivity in 2003. This gain in productivity, however, was not consistent across species. Those with relatively high productivity in 2003 were species that have been stable or increasing in France in recent years (1989-2002). Those with lower productivity in 2003 tended to be those which had declined over the same period. This latter group was diverse, including Marsh Warbler *Acrocephalus palustris*, Lesser Whitethroat *Sylvia curruca*, Willow Warbler *Phylloscopus trochilus*, Willow Tit *Parus montanus*, Linnet *Carduelis cannabina* and Bullfinch *Pyrrhula pyrrhula* – intriguingly, all birds thought to be in long-term decline in Europe as a whole, and high priorities for conservation in the UK. Such links between long-term and short-term dynamics suggest that the impact of increasingly warm springs on productivity may be a major component driving the population trends of many birds. Of course, information on survival at other times of the year, and (for migrants) in other places, will help to complete the picture. It will be fascinating to see if these findings can be replicated using similar data in other European countries.

Julliard, R., Jiguet, F., & Couvet, D. 2004. Evidence for the impact of global warming on the long-term population dynamics of common birds. *Proc. Roy. Soc. Lond.* B (Suppl.) 271: 490-492.

Nest-site selection by woodpeckers in central Europe

Declines in woodland bird populations in the UK and the contrasting fates of Great Spotted *Dendrocopos major* and Lesser Spotted Woodpeckers *D. minor* have heightened the interest in woodland bird ecology and a recent (2000-02) study in riverine forest in central Poland is of particular interest (Kosiński & Winiecki 2004). It concentrates on the nest-site selection of two species: Great Spotted and Middle Spotted Woodpeckers *D. medius*. In the study plot of 224 ha, the number of breeding Great Spotted Woodpeckers was estimated to vary between 48 pairs in 2000 and 24 pairs in 2002, while the corresponding values for Middle Spotted were 38 and 33 respectively.

Each territory was searched systematically to locate the nest-sites. For each site, a number of parameters were measured, including nest-tree species, tree health and exact nest-site. Forty-one nest trees of the Middle Spotted and 54 nest trees of the Great Spotted Woodpecker were included within the analysis.

In general, Great Spotted Woodpecker is a generalist species while Middle Spotted is more of a specialist. Nests of the latter were more likely to be located within 25 m of the edge of

the forest, unlike those of its larger relative. Oak *Quercus robur* and Ash *Fraxinus excelsior* were the most common trees used for nest holes (91% of Great Spotted holes and 68% of Middle Spotted holes). Of the tree species available, Great Spotted Woodpeckers selected oak and alder *Alnus* preferentially, while Middle Spotted Woodpeckers selected dead trees. Both species chose trees with old woodpecker nest holes, limb holes and polyporous fungi (Polyporaceae). Most nest holes (90% of Middle Spotted and 74% of Great Spotted Woodpecker) were sited in dead parts of nest trees, with 63% and 80% respectively in the trunks rather than the limbs.

The authors suggest that there are some possible management implications from their work. Middle Spotted Woodpeckers require a continuous supply of trees of all age categories, which could be promoted via natural processes in modern forestry. They also suggested that a detailed inventory of trees would provide knowledge of potentially suitable sites for both species, one of the main factors determining the carrying capacity.

Kosiński, Z., & Winiecki, A. 2004. Nest-site selection and niche partitioning among the Great Spotted Woodpecker *Dendrocopos major* and Middle Spotted Woodpecker *Dendrocopos medius* in riverine forest of Central Europe. *Orn. Fenn.* 81: 145-156.

Importance of survival rates for Scottish Red-billed Choughs

The Red-billed Chough *Pyrrhocorax pyrrhocorax* is associated with pastoral farming along the Celtic fringe of northwest Europe. In the UK and Isle of Man, despite some increases in recent decades, it is placed on the Amber list of Birds of Conservation Concern because of its declining status in Europe. In addition, its potential sensitivity to changes in livestock farming means that Choughs feature as a priority in conservation work.

As in all animal populations, the number of Choughs depends on the balance of 'vital rates', two of which are breeding success and survival. Put simply, if more individuals die than are born, the population will decline. Consequently, a useful approach is to ask the question 'Which vital rate has the biggest effect on population growth rate?' Targeting conservation management at this aspect of Chough ecology should provide the biggest bang for the buck in terms of influencing bird numbers. However, measuring all the vital rates is only possible for long-term studies that have monitored both annual breeding success for samples of nests and annual survival rates by following known individuals over many years. Just such a study has been carried out by the Scottish Chough Study Group on Islay, in Argyll, where for 20 years Choughs have been studied in detail by colour-ringing a high proportion of the population.

These data have been analysed recently by Reid *et al.* (2004). Initially, they calculated breeding success for each year and annual survival rates for first-year and older birds. Then they calculated how the population size should have varied over the 20 years using these figures. The data from periodic surveys of breeding Choughs matched these predicted sizes closely, suggesting that the vital rates had been estimated accurately. Their next analysis was to find out how sensitive the population growth rate was to change in each individual vital rate. As part of this, they found that it was important to include the actual age of individual birds, rather than to lump them into first-year and older. Overall, they found that variation in population growth rate was mostly caused by variation in survival rate, with pre-breeding survival being the most important. So, efforts to maintain or increase population size might be most effective if targeted at maintaining or improving pre-breeding survival.

One question remains, however. In this study, pre-breeding survival was estimated using re-sightings of marked birds in successive years. In fact, survival probably varies greatly through the year, particularly for first-years. Knowing for which months the survival rate of pre-breeders is lowest and what they are doing at that time would help to identify exactly which aspect of Chough ecology should be influenced through management to affect the population size most effectively.

Reid, J. M., Bignal, E. M., Bignal, S., McCracken, D. I., & Monaghan, P. 2004. Identifying the demographic determinants of population growth rates: a case study of Red-billed Choughs *Pyrrhocorax pyrrhocorax*. *J. Anim. Ecol.* 73: 777-788.

Letters

Environmental Information Regulations

The consultation on the Environmental Information Regulations (EIR) certainly gave cause for concern (*Brit. Birds* 98: 50). The BTO would obviously be worried by the possibility that hard-won datasets could be accessed wholesale because their collection had been part-funded by government agencies or even just because we had given them to such agencies to use for conservation work. For that reason, I spent much time on this issue last autumn.

I am now considerably reassured that government has addressed many of our concerns and will continue to do so (see *BTO News* No. 257, March-April 2005, for more detail). Through discussions between Defra and bodies such as the National Biodiversity Network and the Joint Nature Conservation Committee, the EIR guidelines will continue to evolve in a way that will maximise their usefulness. After all, the idea of these regulations was to enable conservationists and others to get at data formerly protected for commercial and similar purposes but which are relevant to taking forward soundly based conservation initiatives. Defra officials are as keen as the rest of us to ensure that the negative side-effects are minimised.

For example, in respect of the confidentiality of the locations of rare species, Regulation 12(5) states that an authority may refuse to disclose information if its disclosure would adversely affect the protection of the environment to which it relates, and the relevant guidelines specifically refer to the location of rarities. Furthermore, if data suppliers (such as bird clubs) request it, data holders (such as records centres) will consult them if they receive a request for information that they have supplied. If the data suppliers wish those data to be kept confidential, then the holders will supply the data to the third party only if they judge that the reasons for not doing so are weaker than the general presumptions of the EIR – and those reasons can include the damage that releasing the data could do to the good relations that they have with the data supplier.

Nor is it necessarily true that consultants will be free to plunder data lodged in Biological Records Centres without even paying a nominal fee to, say, the bird club that originally gathered the data. There certainly seemed to be dangers of this when we first saw the EIR but it now appears that it will be acceptable to charge reasonable fees, to cover not only the cost of meeting a data request but also the cost of maintaining the underlying systems for gathering and collating the data. I see no reason why those of us who give data to public bodies should not negotiate some sort of royalty fee in respect of their supply to third parties. What is needed is to ensure that such arrangements are negotiated in advance and that there is a proper schedule of charges for potential customers. It is important to remember that the Regulations give a right only of access to data; they do *not* give permission to use the information for anything other than personal use. The data are still protected by copyright.

It is certainly not yet clear exactly how the balance will be struck between the rights of people to access environmental information and the intellectual property rights of those who collected, or collated and interpreted the data. We must continue to be vigilant. But the EIR do not, as some of us may have feared a few months ago, threaten the future of volunteer recording in this country.

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English names for Western Palearctic birds, and the role of the IOC

After, between us, exactly 51 years of involvement with the editing of *BB* (1952-2002 inclusive), and even an overlap in the 1970s, it was a joy and relief to find that at least some of the current absurdities in the list of English names of British and Western Palearctic birds were at last being dropped (*Brit. Birds* 97: 2-5). We hope that the present editorial board and the BOU Records Committee will now liaise to produce a new version of 'The British List'. Unfortunately, however, some of the changes in appendix 3 of the editorial are sufficiently

inconstant and inaccurate to give the impression that they may be little more than suggestions thrown into the ring at an editorial meeting.

Taking examples of inconstancy first, we are glad to see that *BB* has stopped trying to treat the Gabar Goshawk *Micronisus gabar* as one of the chanting-goshawks *Melierax* and, even more, that – by retaining the hyphen, followed by a lower-case initial – it still recognises that the Honey-buzzard *Pernis apivorus* is in no way related to the true buzzards *Buteo*. But, in contrast, we are sad to find that – by dropping the hyphen, followed by an upper-case initial – it now considers that the 'Stone Curlew' *Burhinus oedicnemus* can safely be left for the uninitiated to regard as some sort of curlew *Numenius*. Similarly, to take just two more examples, appendix 3 is to be praised for continuing to show that the Greater Painted-snipe *Rostratula benghalensis* is quite unconnected with the true snipes *Gallinago/Lymnocryptes*, but why has the equally oddball 'Crab Plover' *Dromas ardeola* now lost its hyphen? Such use of hyphens has long been accepted for the storm-petrels (Hydrobatidae) in order to distinguish them from all the other, very different petrels.

Inaccuracies were caused in the compilation of appendix 3 and its relationship to appendix 5. (The latter is misleadingly mislabelled 'in an international context' when, presumably, it concerns discussions involving other continents or, since this is all about Western Palearctic names, other zoogeographical regions.) 'Honey-buzzard' is again an example. We were glad to see the dropping of 'European' (except in appendix 5) for a species whose range extends well into western Siberia and, indeed, as far as the upper reaches of the Ob at about 85°E. Thus, it is not simply European, nor would the rather meaningless sink word 'Eurasian' fit the bill since there are other Asiatic honey-buzzards. 'Western' would be much more suitable. Moreover, by removing any prefix, the editorial has failed to take on board that there have now been a good many records of Eastern [Oriental] Honey-buzzards *P. ptilorhynchus* in the Western Palearctic, 'as far west as Caucasus, Turkey... Israel (20+) and Egypt' (Ferguson-Lees & Christie 2001): that species has a much better claim than the Gabar Goshawk for a place on the Western Palearctic list.

The two red-footed falcons are another geographical sibling pair parallel to that of the honey-buzzards. There appears currently to be a view that the Eastern Red-footed *F. amurensis* ought to be called the 'Amur Falcon', a name which seems to us to fail on several grounds. In particular, it loses the vernacular link with the (Western) Red-footed Falcon *F. vespertinus*, with which it was regarded as conspecific only 30-40 years ago. Furthermore, Amurland – the border of which is defined by the Amur River – forms only a small part of the Eastern Red-foot's range, since it breeds in an area of eastern Asia two-thirds the size of Europe. Contrast this with the prefix 'Eurasian' that has for the last decade weighed down certain European species that extend into western Asia, simply because they do extend beyond the boundaries of Europe.

Some will think that these are no more that semantic quibbles, particularly when systematic lists of scientific names demonstrate affinities and dissimilarities, but, back in the 1980s, one of the original arguments for changing certain English names was to help the layman and the beginner to understand species relationships against the background of our national phobias about foreign languages in general and the Classics in particular. This became, for a few people, an obsession that led in 1993 to what, in his recent sensible comments (*Brit. Birds* 97: 144), Stephen Moss called 'Year Zero'. In particular, Year Zero began the creation of artificial 'first names' for common and familiar species (e.g. 'Wood Nuthatch' for *Sitta europaea*). Year Zero also developed superfluous compound 'first names' in a few cases – a fine example being 'Great [now discarded] Ringed Plover' for *Charadrius hiaticula* – and of unnecessary changes or additions in 'surnames' for others. One of the last group was 'Stock Pigeon' for the inoffensive *Columba oenas*; another was 'Sora Crake' for *Porzana carolina*, which had been changed 40 years earlier from 'Carolina Crake' to accord with the one-word American name 'Sora' (to which the editorial board is now returning).

The original adoption of 'Sora' was one of a total of 47 English name changes made as far back as 1953 by the then editors of *BB* (46: 1-3), who at that time included one of us (IJF-L). Those changes, widely accepted straight away and mostly still standing, were primarily a first attempt to reconcile transatlantic differences. It was decided to switch to the American names of all Nearctic species that were merely vagrants in

Europe: until then, for example, the two yellowlegs *Tringa flavipes* and *T. melanoleuca* had been 'Yellowshank' and 'Greater Yellowshank' respectively, the Least Sandpiper *Calidris minutilla* had been 'American Stint', and so on. Another aim was to adopt such widely used names as Yellowhammer (instead of 'Yellow Bunting') for *Emberiza citrinella* and Dunnock (instead of the inaccurate and misleading 'Hedge-Sparrow') for *Prunella modularis*. These were also readily accepted, and it was disappointing to find the latter saddled with 'Hedge Accentor' in 1993 merely to show that it belongs to the same genus as the other, generally montane accentors.

It seems to us that the usage of English names should be, or at least could be, at four different levels: the county (or state, or other local), the national, the continental or zoogeographical (e.g. Europe or Western Palearctic), and the fully international or worldwide. Thus, the forthcoming *Birds of Wiltshire* is using, simply, 'Swallow' for *Hirundo rustica* and 'Wheatear' for *Oenanthe oenanthe* because only one species of each has ever been found in the county, but 'Common Teal' for *Anas crecca* and 'Common Buzzard' for *Buteo buteo* to distinguish them from Green-winged Teal *A. carolinensis* and Rough-legged Buzzard *B. lagopus*. Any British national publication, such as *BB*, may consider it better to adopt 'Barn Swallow' and 'Northern Wheatear' to distinguish those first two species from other swallows and wheatears in the areas concerned. It is interesting to note, however, that Snow & Perrins (1998) – whose two volumes probably have a wider application in distant libraries than does *BB* – saw no reason to use any of these prefixes in the West Palearctic context.

On a world or even a Holarctic scale, other factors may be involved, not least the difficulty of ever reconciling such differing usages as 'skuas' and 'jaegers' for the Stercorariidae, and the near impossibility of agreement over, for example, the Old World 'orioles' and 'grackles' belonging to the Oriolidae and Sturnidae, respectively, whereas American usage applies both these names to species of Icteridae. (Attempting to reconcile the names of the few icterids that have reached Europe evidently defeated even the 'Year Zero' editorial.)

It is at this last, world level that the International Ornithological Congress should have been entering the scene, in accordance with British and American initiatives begun in the late 1980s. As a result of those initiatives, a committee was set up to make recommendations for universal standardisation, originally to the IOC in Vienna in 1994, then to the next, in Durban in 1998, and, so far as we know, to the next, in Beijing in 2002. Committee members came and went, and the last we heard was that recommendations were being considered zoogeographically. But this seems to us to be a method of compounding the problems caused by different usages in different parts of the world. We believe that the subject is better considered across the board at the ordinal level.

Ferguson-Lees & Christie (2001) included a detailed section on 'English names of raptors'. Richard Porter (*Brit. Birds* 94: 554) considered then that 'this subject will inevitably continue to cause controversy until the International Ornithological Congress eventually comes up with an "agreed" world list'; but he now believes (*Brit. Birds* 97: 144-145) that 'Having to wait well over a decade is really unacceptable. Unless the IOC or its UK advisers on the West Palearctic list can persuade us they are serious in their intent, then might we not do better than encourage the use worldwide of the *BB* recommendations?' A little thought, however, shows that such a British takeover would hardly be practicable.

There is certainly a case for simplifying the present *BB* and BOU lists of English names, and another for developing those used in Western Palearctic volumes. The names do not, however, need to be the same. Their aims should be (a) simply to differentiate clearly between sympatric species with the same generic or family name, and (b) to show, at least in the written word, where apparent relationships are false. Therefore, we suggest the following basic rules:

1. The English name should be as simple as possible within the above constraints. Thus, a county avifauna should use the name 'Sparrowhawk' for *Accipiter nisus* if its list includes no other species of sparrowhawk. Similarly, any British atlas of breeding birds does not need to qualify this word. Even a national or continental list, while *sometimes* finding it convenient to differentiate it along the lines of 'Northern Sparrowhawk', will find that this is often not necessary and certainly there seems no reason to overdo the compound name by repeating it in full every time the species is mentioned within a single text.

2. In general, there should be no need to add an extra

qualifying word (often reflecting size-comparison or geography) to a name that is already qualified by a one-word or compound epithet, unless the latter is already in widespread use. Thus, we are delighted that *BB* proposes to drop the 'Great' before 'Ringed Plover' for *Charadrius hiaticula*, which only those who use lower-case initials have ever confused with Little Ringed Plover *C. dubius*.

3. Where a species is unrelated to others that bear the same generic or family name, we continue to propose that a hyphen followed by a lower-case initial should make this clear. Thus, again, we return to 'Honey-buzzard', 'Stone-curlew', 'Painted-snipe' and many others. In a few cases, the two words may even be run together, as in the South American seedsnipes (Thinocoridae).

4. The word 'Eurasian' should be avoided whenever possible. It has two meanings, the first indicating intercontinental racial hybrids and the second applying to Europe and Asia as one continent. In terms of animal distribution, the latter is particularly unsuitable since, in addition to the Palearctic, Eurasia includes parts of two of the other great zoogeographical regions, the northeastern corner of the Afrotropical and much of the Indomalayan.

With regard to item 3 above, the editors, when publishing in the same issue the first British record of *Circaetus gallicus* under its old name of 'Short-toed Eagle', missed an opportunity of following the increasing practice – not only in Africa, where this species is just a winter visitor, but increasingly in Europe, too – of correctly naming this species the 'Short-toed Snake-eagle'. It is not a true eagle, and it and its five African congeners (all called 'snake-eagles') are usually placed between the Old World vultures and the Asiatic and Indonesian serpent-eagles *Spilornis*.

In arguing for a commonsense approach to the English names of raptors on a worldwide basis (Ferguson-Lees & Christie 2001: 76-79), we did decide to adopt one of the 'invented' names of that despised 'Year Zero' list of Western Palearctic birds. That was 'Monk Vulture' for *Aegypius monachus*, because that somehow seemed to suit it. The alternatives were the little-understood 'Cinereous Vulture' and, qualified in some way, 'Black Vulture'. The latter is, however, confusing because of the totally unrelated Black Vulture *Coragyps atratus* of America and because that name has also long been an alternative for the Red-headed Vulture *S. calvus* in India. (Both of these, incidentally, are much blacker than *A. monachus*.) Now to suggest lumbering the Palearctic species with the additional prefix 'Eurasian' is retrograde.

To end on a high note, however, we are delighted to see such eponymous names as Zino's and Fea's Petrels *Pterodroma madeira* and *P. feae* coming to the fore. Where there is a reason for them, as emphasised in our 'English names of raptors', we think that eponyms have a far more magical quality than pedestrian geographical words.

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EDITORIAL COMMENT This letter provides much food for thought on this topic. We agree that the switch from 'Stone-curlew' to 'Stone Curlew' and 'Crab-plover' to 'Crab Plover' was ill-considered, and will hitherto revert to the hyphenated forms of these names. We intend to review other suggestions, notably the adoption of 'Short-toed Snake-eagle' in time for a revised version of the *BB* list later this year. We consider that 'Eurasian' has more merit than perhaps IJF-L and DAC suggest, but, as with so many aspects of establishing a list of English names, it is a matter of opinion, and theirs is by no means invalid. With regard to the IOC initiative on names, we understand that names are being considered zoogeographically as a starting point. Once a preferred set of names has been established for each region these will be combined, with voting on species common to more than one region to achieve a 'standard' international name – which will doubtless leave plenty of room for debate and disputes we imagine! This is the stage that has been reached to date, and a single list is now in circulation.
Eds

Acknowledging records

We are constantly, and quite reasonably, asked to submit our bird records to the appropriate body, often with a lamentation that too many people cannot, it seems, be bothered to do so. On the basis of my experience over the past several years, it is perhaps not so surprising that some observers cannot be bothered. I have not counted up the number of times that I have sent in records (including reports to local societies and responding to published requests in birding journals), but my guess is that not more than about one in four, at the very most, has ever elicited an acknowledgment. It is not only bird clubs and societies, or those in the UK, which adopt this attitude. I have had similar experiences with overseas organisations (where the response rate is nearer one in ten) and those dealing with other branches of natural history. It is all too easy to adopt the attitude that 'if they cannot be bothered to thank me, I cannot be bothered to send any more records'. It does, after all, take time and effort to dig out one's records and marshal them into a suitable format. When I first sent records to my local bird club many years ago, I invariably received a postcard acknowledgment, often with a note about some recent local sighting of interest. We do not expect that today, but with most records submitted by e-mail, it needs barely more than a click of a button to thank the recorder for their time and trouble.

Careful recording and record submission is surely vital to ornithology and conservation, at almost every level. Am I alone in the belief that offering thanks is not only polite, but that it encourages further commitment from all those people whose records the organisations clamour for?

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Large-scale movements of Little Bitterns

I was fascinated to read Mike & Tanya Langman's account of a late-evening movement of some 120-150 Little Bitterns *Ixobrychus minutus* along the Black Sea coast of Bulgaria on 1st September 2003 (*Brit. Birds* 97: 626-627), but in view of the fact that *BWP* is quoted as saying that such observations are 'quite exceptional', it seems worthwhile to draw attention to the following.

During a seven-year survey of waterbird migration along the north coast of the Sinai Peninsula, Paran & Shluter (1981) reported the discovery of mass diurnal migration by Little Bitterns. This behaviour was first noted in 1976 when, during 10th-12th September, a total of 1,922 were counted, of which no fewer than 1,861 occurred on the 11th. Dawn-to-dusk observations from mid August to mid October 1978 revealed diurnal movements totalling 4,172 birds on 14 days, with a peak of 2,693 on 17th September. Paran & Shluter also revealed that the movement of '40-45 flying over Aboukir, Egypt' cited by *BWP* occurred in late morning, at 11.00 hrs on 9th September 1944, and that this site is just 130 km from their observation point.

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Reference

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Notes

All Notes submitted to *British Birds* are subject to independent review, either by the Notes Panel or by the *BB* Editorial Board. Those considered appropriate for *BB* will be published either here or on our website (www.britishbirds.co.uk) subject to the availability of space.

Egrets and herons landing and fishing in deep water

On 18th March 2004, at Gönyeli (Geunyeli) reservoir, near Nicosia, Cyprus, we saw two Little Egrets *Egretta garzetta* repeatedly landing and apparently trying to catch fish in the deep open water of the reservoir. They flew to and fro across the water, usually several metres above the surface, but often abruptly descending so that their feet almost or just touched the water. Often they would land, feet first, in the water, and plunge their head and bill forward and below the water, almost immediately flying up so that their time in the water was only a second or two.

This behaviour continued intermittently for c. 45 minutes. At times, the Little Egrets were joined by two Grey Herons *Ardea cinerea* and a Great White Egret *A. alba*. One of the herons and the Great White Egret landed in the water in a similar manner to the Little Egrets; all three species flew up from the water without any difficulty.

We returned to Gönyeli on 20th March and found all three species engaged in similar behaviour, which continued intermittently from 12.15 until 15.30. The two Little Egrets made many fishing attempts, often in rapid succession, but only c. 20% led to landings in the water and strikes with the bill. The majority were aborted just before or just as their feet touched the water. We never saw them with fish in their bills, though twice they threw their heads back sharply after striking, as though tossing something back in their bills. On one occasion, one of the Little Egrets, heading into the light wind, and still in flight, took two or three 'steps' on the water, and reached down to take something from the water's surface with its bill.

The Great White Egret made fewer fishing attempts, but c. 50% led to landings in the water and strikes with its bill. It flew slightly higher above the water than the Little Egrets (c. 5 m), and would suddenly wheel round, drop rapidly and lower its legs just before entering the water. As it entered the water, it struck deeply with its bill, its head and neck both going under. It caught three fish, each c. 15 cm long, deep-bodied and pale-reddish/orange, which were carried to a nearby hillside to be consumed.

The Grey Herons made only two landings in the water and we did not see the outcome; they seemed more interested in harassing the egrets and attempting to steal their catch. We returned again on 30th March, and saw one Little Egret engaged in the same behaviour. All three species winter at the reservoir, and these individuals may have been present for some months, so perhaps one learnt this behaviour and the others copied it.

There is little mention of any such behaviour in *BWP*, which states that Grey Herons are exceptionally recorded swimming and diving for food; and that when water is too deep for wading, Great White Egrets may stand by the edge peering into the water, then take off and in flight stab down at the prey. Fishing while hovering or flying over deep water (though not plunge-diving) has been recorded for Little Egret from the Donzère-Mondragon canal in southeastern France (Olioso 2002), from fish ponds in Israel (Zev Labinger pers. comm.) and from Lake Victoria, Uganda (Julius Arinaitwe pers. comm.). There is also a record of Western Reef Egret *E. gularis* landing on the sea to fish near Mirbat, Sultanate of Oman (Olioso 2002).

Acknowledgments

Our thanks to Marc Duquet for the Olioso reference, and to Julius Arinaitwe and Zev Labinger for their observations.

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Inland records and unusual feeding methods of Western Reef Egret

Western Reef Egrets *Egretta gularis* are almost exclusively coastal throughout much of their range (Snow & Perrins 1998). The western form *E. g. schistacea* of the Red Sea and Arabian coasts is dispersive, though little appears to be known about its seasonal movements (Cramp & Simmons 1977; Snow & Perrins 1998). In southern Oman, birds regularly winter along the Dhofar coasts, where they occur from August through to April, exceptionally June; these are at least 500 km from the nearest known breeding sites, around Bar al Hikman (Eriksen *et al.* 2004). Here, dark morphs outnumber white morphs by approximately 5:1, whereas along the shore of The Gulf white morphs are commoner by about 2:1 (Bundy *et al.* 1989). We have seen Western Reef Egrets inland, mostly in autumn/winter, at both Thumrayt and Dawkah, 80 km and 200 km from the southeast coast of Oman respectively. Both are desert areas with minimal open water or suitable habitat. The first at Thumrayt was seen on 3rd-8th June 1981, and records have been annual since then, with a peak of four on 19th October 1983. It seems likely that birds along the Dhofar coast are mainly from breeding areas along the Oman coast to the northeast, but these birds recorded in the desert could equally well have crossed from The Gulf, a distance of some 2,000 km.



Graham Bundy

109. Pale-morph Western Reef Egret *Egretta gularis*, Dawkah, approximately 200 km from the southeast coast of Oman, November 1984.

On 21st October 1983, GB saw a dark-morph individual foraging at Jarzit Sun Farm, near Salalah, in a large field with 13 Little *E. garzetta* and 19 Cattle Egrets *Bubulcus ibis*. It was feeding on abundant locusts (Acrididae) there and was highly active, sometimes chasing off the other herons aggressively. The unidentified locusts, up to about 3 cm in length, were particularly abundant in the region in autumn 1983. On 20th November 1984, at Mirbat, another dark-morph bird was seen to fly from a rock by the sea, progress some 10 m, pick a live fish from the surface, and land on another rock. The fish, about 10 cm long, was swallowed quickly. Another six Western Reef Egrets were hunched on nearby rocks and ignored this event, suggesting that it may be less unusual than it might have appeared. We can find no published reference to such behaviour.

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Little Egret with yellow lores

The paper describing the observation and further identification of the first Snowy Egret *Egretta thula* for Britain (Jackson 2004) prompted me to recall a Little Egret *E. garzetta* showing yellow lores which I photographed in l'Albufera de Valencia, eastern Spain, on 10th July 2001 (plate 110).

Although bare-part coloration is often extremely helpful in separating white-plumaged egrets, yellow tones to the lores can be found in



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110. Little Egret *Egretta garzetta* showing yellow lores, l'Albufera de Valencia, Spain, July 2001.

almost all species. Separation of Little Egret from the closely similar Snowy Egret can be challenging, although bright yellow lores are regarded as diagnostic for the latter species at all ages (Massiah 1996). According to Dubois & Yésou (1995), Little Egrets usually have greyish lores, which become brighter during courtship. Many show orange or reddish lores, while some can exhibit lilac-rose lores, with a greenish or bluish tinge. Rarely, the lores can appear distinctly yellow.

The egret that I observed in l'Albufera de Valencia in July 2001 showed striking yellow lores at a certain distance and this immediately attracted my attention. The ornamental filoplumes on the nape and the wholly dark tibia readily ruled out Snowy Egret and were typical of Little Egret. Closer observation revealed a greenish tinge to the yellow lores. Although I have observed many Little Egrets, in Spain and elsewhere, this is the only occasion on which I have seen a Little Egret with yellow lores. Now that many more birders in Europe will be on the lookout for Snowy Egret, I felt that this was worth documenting.

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Carrion Crow killing by strangulation

On 4th May 2003, at Grove Ferry, Kent, I watched a pair of Common Coots *Fulica atra* harassing an ailing Northern Lapwing *Vanellus vanellus*, which was trying to hide in a clump of emergent vegetation surrounded by water. The Coots repeatedly jabbed at the Lapwing and sometimes appeared to force it under the water. A Carrion Crow *Corvus corone* was attracted to the disturbance and hovered over the vegetation, making several unsuccessful attempts to grab the Lapwing. After a few minutes, the Crow retired to the shore of the pool, some 5 m away. The Coots eventually departed, and a short while later the Lapwing stumbled out of the vegetation and made for the shore. As it reached the shallows the Carrion Crow grabbed it by the neck, just below the skull, and hauled it onto dry land. Without ever losing its grip, the crow twisted the Lapwing's neck sideways and upwards and pinned the bird to the ground, holding it down as the Lapwing's wing-flaps became increasingly feeble. After about three minutes, the crow released its grip, and the Lapwing was clearly dead. The crow then took a drink of water, and proceeded to break up the carcase with powerful hammer blows of its bill. I have never seen a Carrion Crow kill vertebrate prey in this fashion before; all previous records in my notes refer to powerful hammer blows with the bill against skull, neck and thorax, while *BWP* refers only to birds being killed by 'blows of bill'. Goodwin (1976) does not describe specific details of the methods employed to kill vertebrate prey and there appears to be no previous record of Carrion Crows killing by strangulation.

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Adult Carrion Crow allopreening a juvenile

On 17th August 2003, at Grove Ferry, Kent, I watched a pair of Carrion Crows *Corvus corone* foraging in short grassland in the company of a single juvenile. From time to time, one of the adults fed the younger bird and there appeared to be a clear parental relationship between the adults and the juvenile. During a period of about ten minutes, I saw one of the adults allopreening the juvenile on at least five occasions. Each time, the adult nibbled and preened the undersides of the primaries, secondaries and tertials of the juvenile's right wing. The young bird showed no response, and continued foraging. It seemed always to be the same adult which maintained a close proximity to the juvenile, while the other fed some metres away. Goodwin (1976) suggested that allopreening occurs between birds of a pair or between siblings, and is usually confined to the head and upper neck in corvids. There appears to be no previous record of parental allopreening of a juvenile's flight feathers in this way.

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Common Raven raiding Peregrine Falcon nest

On 14th April 2004, I was watching a Peregrine Falcon *Falco peregrinus* on eggs at a working quarry in the north of England. The nest was on a cliff face, and I watched it through a telescope from the visitors' car park. About 150 m along the cliff face, a pair of Common Ravens *Corvus corax* had five near-fledged young in a nest.

At 15.23 hrs, the female Peregrine erupted suddenly from the nest, forced off the ledge by an adult Raven. At 15.45 hrs, the Raven was seen to pick up one of the Peregrine eggs and appeared to drop it, and then began digging out grass and earth from the ledge. At 16.15 hrs, the Raven picked up two eggs in succession, which it appeared to cast to one side towards the back of the ledge; albumen appeared to be dripping from its bill. It left of its own accord at 16.20 hrs. Both adult Peregrines had been dive-bombing the Raven repeatedly throughout its stay at their nest, but could not dislodge it owing to the overhanging cliff face. At 16.25 hrs, the female Peregrine returned and resumed incubation after 2-3 minutes of shuffling about.

A licensed ringer examined the nest about two weeks later and found two eggs, both viable; the chick from one of these hatched and fledged, having been ringed, microchipped and DNA-sampled on 7th June.

This was the first time that Ravens had bred successfully in this quarry, although they had built nests previously. Peregrines had bred for several years in an adjoining quarry, usually fledging two young, but as their traditional face was unavailable in 2004 (for operational reasons), they had moved to this larger site for the first time.

Ratcliffe (1980) suggested that, where the two species nest in proximity, Peregrines will usually be dominant over Ravens. In *The Raven* (Ratcliffe 1997), he stated that the Raven is a potential predator of Peregrine eggs and chicks, though no confirmed instances of this had been published. Ravens have been recorded predating Common Buzzard *Buteo buteo* eggs, however, but this is rare. Orton (1989) recounted seeing a Carrion Crow *C. corone* take an egg from a (temporarily unattended) Peregrine nest. Peregrines have been known to take newly fledged Ravens, and perhaps the anticipation of this precipitated the incident described here.

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Anon.

EDITORIAL COMMENT Derek Ratcliffe has commented: '[This] is, as far as I am aware, a novel observation: nobody has ever reported a Raven actually dislodging a Peregrine from its nest and then being allowed to stay there for almost an hour. It makes me wonder if the [female] Peregrine was subnormal in some way. The whole episode is extraordinary, but the odd thing is that the Raven did not demolish the whole clutch.'

House Sparrow feeding fledged Rock Pipits

On 12th June 2004, I found one of the year's first fledged Rock Pipits *Anthus petrosus* on Fair Isle, Shetland. The bird was associating with a group of recently fledged House Sparrows *Passer domesticus*, and was begging and calling to be fed. Shortly afterwards, a male House Sparrow landed nearby and was seen to feed the begging Rock Pipit. The fledged sparrows were being fed independently by other adult House Sparrows. Presently, the young Rock Pipit once again called out to be fed and, as soon as the (same) adult House Sparrow landed nearby, it chased the adult bird in a begging fashion. This male sparrow was clearly not with or feeding any other House Sparrows, and there were no adult Rock Pipits in sight. Other observers and I repeatedly saw this behaviour for several days and, approximately one week later, when I tried to obtain a photograph of the birds, it became apparent that the male sparrow was feeding a whole brood of four Rock Pipits! Given the often aggressive nature of the House Sparrow towards other bird species and to its own (*BWP*), it struck me as odd that a male should be feeding and apparently raising a brood of Rock Pipits. On Fair Isle, they nest in completely different habitats, with House Sparrows occupying the many buildings around the island and Rock Pipits preferring to nest in holes in the cliffs or in vegetation close to the shore. I can find no other published record of what was a fairly extraordinary sight.

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The status and distribution of the Cirl Bunting in France in 2003

The recent paper on the status of the Cirl Bunting in England (Wotton *et al.* 2004) is highly encouraging for the future of the species there. UK conservationists may be interested to learn that the species is also doing well just across the Channel, in France. The CRBPO (Centre de Recherches sur la Biologie des Populations d'Oiseaux) has organised a national Breeding Bird Survey scheme (the STOC programme) in France since 1989, and was able to estimate this species' population trend from 1989 to 2003. During this period, the French Cirl Bunting population has increased significantly, by 54% (see fig. 1).

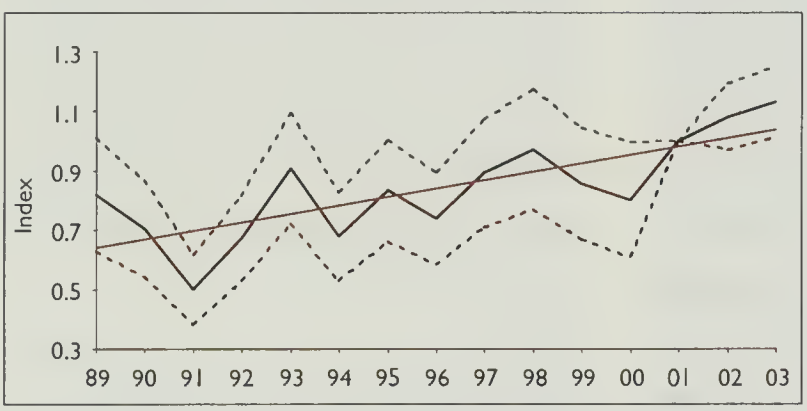


Fig. 1. Estimated population trend of Cirl Bunting *Emberiza cirlus* in France between 1989 and 2003. During this period, the population has increased by 54% (Wald test, $\chi_2^1 = 6.15$, $P = 0.013$), with no significant yearly deviation from the linear trend (Wald test, $\chi_2^{13} = 13.12$, $P > 0.4$). Data from the national Breeding Bird Survey, index fixed to 1 in 2001 as the sampling procedure of surveyed sites changed in that year (see Jiguet 2001 and Julliard *et al.* 2003 for details on sampling designs, field methods and data analysis with log-normal linear models).

There are no conservation measures dedicated to the Cirl Bunting or its habitats in France, so it is presumed that this species benefits from climate warming, fitting a general pattern observed in France whereby southern species are increasing, while northern species are declining (Julliard *et al.* 2003). As an illustration of the effect of climatic warming on population

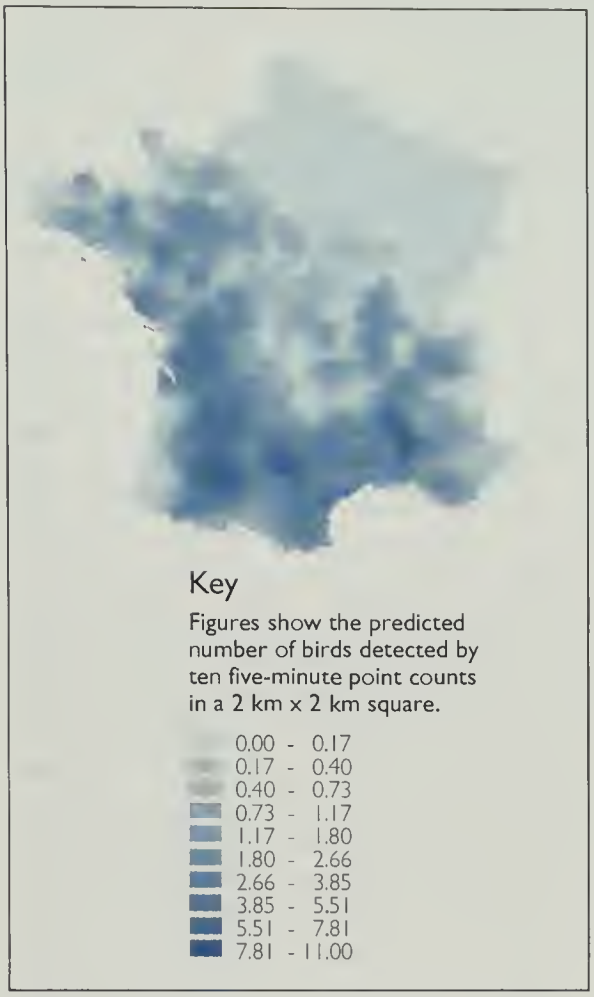


Fig. 2. Prediction map of relative abundance of the Cirl Bunting *Emberiza cirlus* in France in spring 2003. Data from the national Breeding Bird Survey (see Jiguet 2001 for details on sampling design and field methods used). Spatial predictions are obtained through interpolation models which use the spatial autocorrelation within the data to help predictions at non-surveyed locations (see Jiguet & Julliard 2004 and Jiguet *et al.* in press for details on the statistical methods used). Relative abundance increases with increasing depth of colour. The palest colour does not indicate a null abundance, but a predicted value which is close to zero when compared with what can be detected with the BBS field methods.

dynamics, Cirl Bunting productivity in 2003 was 59% higher than the mean from 1989 to 2002 (Jiguet & Julliard 2004), following an unusually warm spring in France (temperatures were constantly between 1°C and 3°C above average, across the country, from March to June). This statistic accords with the general pattern observed in 2003 for 32 common bird species sampled by the French Constant Effort Site ringing scheme (Julliard *et al.* 2004).

Cirl Bunting populations are clearly increasing in France, though not on the same scale as those in Devon. The large increase in the number of territories in Devon is certainly due largely to the local conservation efforts, though the species should also benefit from global climate warming. Recent Breeding Bird Survey data allow us to produce a map predicting relative abundance of the species at a national scale (fig. 2), and this helps us to understand how the Devon populations complete the general distribution pattern observed for the species in northwest France. The data we present here are good news for the British Cirl Bunting population, which may continue to benefit from local conservation efforts, but, in the future, perhaps also from global climate warming and colonisation from healthy populations in France.

Acknowledgments

The French common birds monitoring programmes (BBS and CES) would not be feasible without the dedicated participation of hundreds of volunteers, to whom this note is dedicated.

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Obituaries

Janet Kear (1933-2004)

Following the devastating diagnosis in September 2004 that she had a brain tumour, Janet Kear, in her typical matter-of-fact fashion, went home to order her affairs in her beloved Devon country cottage by the River Mole on the King's Nympton estate. That done, she accepted devoted care in South Molton Community Hospital from early November, until she passed away peacefully on 24th. With her passing, we lost a warm friend, an outstanding scientist, a conservationist of enormous standing and an unrivalled authority on global wildfowl.

For a waterfowl fanatic, it was impossible to sit in Janet Kear's picture window at Martin Mere and gaze out over the multitude of waterbirds without feeling close to heaven. Spectacular view or not, it was equally impossible to be in Janet's house and not to feel completely and utterly at home. Enthusiastic and kind, a great listener, with a keen wit and a dancing, captivating conversation punctuated with girlish laughter, Janet was warm and welcoming with her hospitality. She was also great fun, and it was hard not to fall under her spell. And as if all this was not enough, she made the most wonderful gravy and mixed a mean gin and tonic for her guests!

Whilst Janet will, of course, be remembered for her sharp intellect, vast breadth of knowledge and her incredible achievements, it was her passion, warmth and humility that moved and inspired so many from various different walks of life. Janet was truly for birds and for people. It was no coincidence that she was just as able to melt hard-nosed businessmen into contributing funds to develop her beloved Martin Mere Centre as she was to lend a hand 'scribing' and mucking in with a team of muddy ringers cannon-netting Pink-footed Geese *Anser brachyrhynchus* on the Mere. Her warm and generous spirit was selfless in encouraging and supporting others, especially the underdog. It is no surprise to find that many leading characters in nature conservation enjoyed a formative association with Janet at some stage in their career.



Photographer unknown

111. Janet Kear, with her husband, John Turner, outside Buckingham Palace, after receiving her OBE in 1993.

Janet started her distinguished academic career with a PhD on finch feeding behaviour, under R. A. Hinde at Cambridge. When Peter Scott offered her a position at the then Wildfowl Trust at Slimbridge in 1959, he launched a glorious association with the Trust that was to last the remainder of her days. Initially, she distinguished herself in many fields of waterfowl research, being amongst the first to study behaviour, cognition, development and disease, and even undertook pioneering work on agricultural conflict, working with her first husband, Geoffrey Matthews. She became deeply interested in captive-animal health issues and was a pioneer in the improvement of avicultural techniques and tackling problems of disease, typically putting the welfare of the birds first. When offered the position of Curator of the Martin Mere Centre in Lancashire, Janet made the remarkable transition from Principal Scientific Officer to

successful manager of one of northwest England's foremost wetland spectacles and tourist attractions. Here, she was to meet her much-loved second husband, John Turner, and forged a lifelong and deeply happy partnership, which was to inspire many with their hard work, friendship and kindness. Later, Janet was to become Assistant Director of the Wildfowl & Wetlands Trust, and its Director of Centres before formally retiring from the Trust in 1993. Latterly, she had served as Trustee and Council member of the WWT, and she would, undoubtedly, have been the best CEO the organisation never had.

Such a glowing career ought to be enough for any person, let alone for a woman, since prominent and successful women remained rare in the ornithological world at that time. Yet if she had been hard done by prejudice and her career path encumbered by the intervention of masculine egos, you would not have heard about it from the lips of Janet Kear. What she achieved in her life she did so on merit, by being good, by just being Janet. She stood as a great but quiet inspiration to the many women who worked with her through the years. Nor was she content just with the 'day job'; despite a consuming professional life and increasing management responsibilities, Janet was determined to contribute to ornithological research, both by encouraging others and by editing the British Ornithologists' Union's world-ranking journal *Ibis*, which she did from 1980 to 1988. She developed the journal and its global profile before ultimately becoming vice-president of the BOU and subsequently its first female president, a post she held from 1990-94 with well-justified personal satisfaction. Janet devoted herself to causes many and varied, reflecting both her energy, wide interests and great commitment. At various times, she served the Association for the Study of Animal Behaviour, the Avicultural Society, the Zoo Federation, the International Union for the Conservation of Nature (through its Endangered Waterfowl and Captive Breeding Specialist Groups), the British Trust for Ornithology, the Royal Society for the Protection of Birds, the Jersey Wildlife Preservation Trust, Devon Birdwatching and Preservation Society, National Museums Liverpool and English Nature, amongst others. This was, however, never a mere list of duties, each of the organisations and their respective staff remember Janet for her personal commitment, her down-to-earth good advice and her shared pride in their achievements. And proud she too deserved to be, especially during the three difficult terms with the Council of the fledgling English Nature, spanning almost a decade until 1999, a time upon which she always looked back with great fondness. Janet was always deeply concerned that the nature of these Isles should be entrusted to good hands. Recognition of her substantial talents and contributions came in the form of an honorary doctorate (and title of 'Professor', which characteristically she never used) from John Moores University in 1990, an OBE in 1993, and the BOU medal in 1998.

Formal awards are a pleasant recognition, but the true rewards Janet Kear brought to us were through her skill as a communicator, her ability to reach and touch people, especially those with no common interest. She had a fearsomely impressive intellect and a capacity to store apparently unbounded knowledge, which she could convey onwards to us less-endowed folk with a bewitching ease. She was an outstanding lecturer, and was an excellent speaker at conferences, but her written production was also prodigious and impressive. Her beguiling Poyser book *Man and Wildfowl*, with its rattling pace and abundance of riches, was perhaps one of her most fondly remembered. In her busy life, she somehow managed to find time to write seven books (including two classic monographs, *Hawaiian Goose* and *Flamingos*), to edit the WWT journal *Wildfowl* for many years and to publish no fewer than 90 scientific journal articles! Among the latter was, of course, her Bernard Tucker Memorial Lecture to the Oxford Ornithological Society published recently in this journal (*Brit. Birds* 96: 217-233). Her final and undoubtedly most important book was at the printers when she died: the Oxford University Press series Bird Families of the World describing the *Ducks, Geese and Swans*, conceived and edited by Janet, was published in March 2005. It has been an incredible labour of love based on contributions from over 73 different authors around the globe and, despite a difficult gestation period, is set to become Janet Kear's fitting and enduring memorial.

Lists of achievement are as nothing when we remember how much poorer we are for the loss of a timeless polymath and such a good friend to those of all ages. Despite experiencing diffi-

cult years, Janet was always a potent force for the positive. We shall fondly remember her for the vigour with which she tackled all of her life, not least for her courage in the last weeks as she fought with the knowledge and reality of her illness. She leaves a great gap in all who knew her, especially her soul mate John Turner, and an army of friends and admirers. Janet Kear leaves but one single unfinished task: that of the biography of St Werburgh, the seventh-century princess of Mercia, perhaps best known for banishing wild geese (by power of persuasion) from plundering the cornfields of Weedon, in present-day Northamptonshire. Werburgh was one of the best-loved of the Saxon saints, despite a difficult life. She was renowned for her wisdom and humility, knowledge and devotion, charm and charisma and because it was said that despite her eminence, '...to all in her care she seemed rather the servant than the mistress'. What a clever trick. No wonder Janet Kear found such deep affinity in her story!

Tony Fox

Colin Joseph Bibby (1948-2004)

Colin Bibby died at home in Cambridgeshire on 7th August 2004, after an illness which he faced with the same good humour and clear objective analysis that characterised his professional work. Knowing that his illness was terminal, Colin spread the news to colleagues and friends, and set about making the most of his last months, weeks and days.

Born on 20th November 1948, he was educated at Oundle School and Cambridge University. The term 'conservation biologist', largely unknown when he started his career with the RSPB in 1971, could have been made for him. He brought the passion of a convinced conservationist to guide the topics of his scientific research, and brought incisive rational argument to guide priority-setting and action in bird conservation.

He was a thinking conservationist who would challenge sloppy arguments and accepted dogma. He had a major influence on the criteria for the first Red Data List for UK birds. This thinking remains the bedrock for setting bird conservation priorities up to the present day, and has been carried forward by others to influence the priorities for all wildlife enshrined in the UK Biodiversity Action Plan. Colin argued that conservation needed a robust and defendable framework to guide resources wisely. This is now second nature to many bird conservationists, but less than 20 years ago such thinking was largely absent.

Once conservationists know which species deserve their attention, Colin argued that they then need a rational way to choose the best approaches to their conservation. He championed the use of Species Action Plans within the RSPB, learning from their use in other countries, and again this way of working is now widespread in UK conservation – and not just for birds.

As a scientist, Colin carried out important work on a range of subjects. His PhD study of the Dartford Warbler *Sylvia undata* helped to guide conservation action for the species. He also carried out influential work on reedbeds and the species that live in them, the Merlin *Falco columbarius*, woodland birds, seabirds and migration strategies. In 1986, he became the RSPB's Head of Conservation Science and had a lasting influence on the Society's work through recruiting a strong team and directing its work.

After leaving the RSPB in 1991, Colin took the post of Director of Science and Policy at BirdLife International, where his first major project involved working with a team to complete a study on Endemic Bird Areas (*Putting Biodiversity on the Map*, BirdLife International 1992). The take-home message of this global analysis was that many of the world's birds have restricted distributions and that often such species live in the same places. Therefore, a rather small proportion of the Earth's surface (less than 1% of its land) would, if properly managed and protected, suffice to conserve a surprisingly large proportion (about 25%) of the world's birds. Such an approach to biodiversity hot-spots has become an increasingly strong plank of conservation efforts for many species in recent years.

From 2001, he devoted much of his time to working with international companies in an attempt to influence their environmental footprint. Colin saw this approach as negligently neglected, and he regarded it as extremely important for the future.



M. Poulsen/BirdLife

112. Colin Bibby, at the BirdLife International conference, at Rosenheim, Germany, in 1994.

Over 50 clearly written scientific papers are a lasting testimony to Colin's scientific output but the communication of his ideas went much further. Three books (*Bird Census Techniques* (1992), *Expedition Field Techniques* (1998), *Conservation Project Manual* (2003)) helped to provide a wider audience with access to the thinking and techniques behind well-designed survey work. He was a keen supporter of *British Birds* and a long-term member of its Behaviour Notes Panel. He was an enthusiastic writer of book reviews, and a highly respected judge of the joint *BB*/BTO Best Bird Book award. He was also closely involved with the BTO as a member of several of its committees. As a public speaker, Colin was sometimes both inspired and inspirational – and his ability extended to enthusing audiences of scientists, conservationists, birdwatchers and the general public. Sometimes in conversation, one felt that Colin's brain had raced ahead several steps and one was struggling to keep up – and this meant that he was liable to leave some people bemused in his wake – but his probing questions and clear insights led many to a much clearer understanding of issues.

If this account gives the impression that Colin was an impressive intellectual with at times a rather forbidding air then, yes, he could be that, but he was much more too. Colin knew his birds from firsthand experience as a birdwatcher and a ringer (he was a founder of the Wicken Fen Ringing Group), and was a knowledgeable and stimulating companion in the field. My fond memories of him include bouncing around in an absurdly small boat in frighteningly big seas in the Azores, watching the sun set over the Tagus Estuary while studying Pied Flycatchers *Ficedula hypoleuca*, and being introduced to the study of birds through Dartford Warblers in Dorset. In all cases, the memories of his delight in the birds and the places where they live are coupled with those of the stimulating and increasingly irreverent alcohol-fuelled discussions at the end of the day. Very few people who can fill in a moult card have as impressive a grasp of the politics of protecting areas for wildlife as Colin did. And few who can argue with decision-makers that bird numbers are an important measure of whether or not development is sustainable would be the first of a group of over 100 birders to identify a Marsh Warbler *Acrocephalus palustris* on a field trip in The Netherlands.

Colin's work was recognised by the receipt, in 1994, of the Dr A. H. Heineken Prize for Environmental Sciences, on behalf of BirdLife International, in recognition of its excellence in research. In 2004, he received the RSPB Medal to mark his contribution to ornithology.

He is survived by his wife, Ruth, a medical doctor, and their three sons.

Mark Avery

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

RSPB opposes Lewis windfarm

The RSPB has formally objected to the massive windfarm proposal for Lewis, in the Western Isles (*Brit. Birds* 97: 674), which would involve the construction of 234 wind turbines on an extremely fragile wildlife site on the north Lewis moor. The windfarm would have a 25-year lifespan, and the developers, AMEC and British Energy (Lewis Wind Power Ltd), concede that during this period *at least* 50 Golden Eagles *Aquila chrysaetos*, as well as 50 Merlins *Falco columbarius* and 20 Red-throated Divers *Gavia stellata*, would be killed through collisions with the turbines! Their Environmental Statement also acknowledges that 350 pairs of European Golden Plover *Pluvialis apricaria* (1.5% of the British & Irish population) and 314 pairs of Dunlin *Calidris alpina* (4% of the British & Irish population) will be lost to the area because of displacement. The RSPB is objecting in the strongest terms to the proposal because the turbines would be spread across the Lewis Peatlands Special Protection Area, which is protected under European law for a variety of species, including (in addition to the five species mentioned above) Black-throated Diver *G. arctica* and Greenshank *Tringa nebularia*. The numbers of breeding birds on the SPA are staggering, including 3,400 pairs of Dunlin (37% of the British population), 140 pairs of Greenshank (10%) and 80 pairs of Red-throated Diver (9%).



David Tipling/Windrush

113. White-tailed Eagle *Haliaeetus albicilla* – potentially affected by the Lewis windfarm proposals?

'We believe this windfarm proposal is not just bad for birds but bad for the development of renewables as well,' said Anne McCall, RSPB Planning and Development Manager. 'The developers are proposing to put a massive industrial complex on a very important designated site for wildlife. This is asking for conflict and that is bad news for the development of renewables. We have tried to work constructively with the industry and the Scottish Executive to develop a proper, strategic approach to how this industry is developed – precisely because that is the best way to guard against inappropriate developments which give the industry a bad name.'

The RSPB supports the development of a mix of renewable energies, providing that they do not pose a significant threat to birds or their habitats (indeed, it encourages its members to sign up for 'green electricity' with Scottish and Southern Energy), but in its submission to the Scottish Executive, the RSPB is arguing that this particular development is in precisely the wrong place. The wind turbines would be 140 m tall with a rotor diameter of 100 m. They would each require a concrete foundation of approximately 1,800 m² plus an area of hard-standing for the installation cranes. The development would require 167 km of roads, nine electrical substations, a control building and 56 km of overhead lines, supported by 210 pylons. The RSPB believes that such a scale of development could not avoid causing major disruption to the unusually large numbers of scarce breeding birds which come to the Lewis Peatlands, attracted by the wide open landscape and blanket bog habitat, with its special plant life and rich insect communities. As well as the breeding birds for which the site is designated, the Lewis Peatlands are a thoroughfare for migrating Whooper Swans *Cygnus cygnus*, Corn Crakes *Crex crex* and Scotland's expanding – but still vulnerable – population of White-tailed Eagles *Haliaeetus albicilla*.

Satellite star brought down to earth

Meanwhile, the electricity industry has claimed another victim. Six years after she was satellite-tagged as a chick, Donna the White Stork *Ciconia ciconia* has been killed by power lines. Hatched in Belgium, the much-travelled stork had left its wintering grounds in southern Spain, and died shortly after reaching its breeding site in the Calvados region of France. Wim Van den Bossche, leader of the 'Storks Without Borders' project, had followed Donna's progress for the 2,033 days after she embarked on her first autumn migration. This is a record in the fledgling science of satellite-tracking birds; no other bird has been tracked on a daily basis for such a long period.

Donna left Seville on 11th February 2005, stopped off near Madrid for ten days, and reached Calvados on 4th March. The next day, she was found dead under power lines near the estuary of the River Seine. Electrocution and collision with power lines are significant causes of death among White Storks: along migration routes, up

to 59% of dead storks and 90% of wounded storks examined by researchers have hit wires. Van den Bossche says that 'bird-friendly' alterations to power lines can reduce stork mortality – plastic caps and tubes can be fitted quickly and cheaply to existing pylons, poles and cables; and guidelines are available to ensure that new power lines present the minimum risk to birds. Storks Without Borders (www.storks.be) has tagged 23 storks since 1999 and tracked their movements from Belgium to the wintering quarters in Spain/Portugal and western Africa.

House Sparrow and Starling win full protection

As from 1st March, landowners have lost the right to shoot House Sparrows *Passer domesticus* and Common Starlings *Sturnus vulgaris* that threaten crops. Until now, these two species have been among those on the 'general licence' (exempted from the blanket ban on harming wild birds) in cases where they could be considered a pest. Their dwindling numbers have resulted in both species being placed on the 'Red list' of species of conservation concern and they will now benefit from extra protection. However, Canada Geese *Branta canadensis*, whose droppings are blamed for causing a serious environmental nuisance in parks, are to lose that same protection. Furthermore, the geese are among ten species – including certain gulls *Larus*, Rooks *Corvus frugilegus* and Starlings – which face less protection if they are deemed to pose a risk to aircraft safety.

The RSPB welcomed the 'long overdue' move to protect the two species, but criticised the failure to extend it to other endangered birds. A spokesman said: 'We are pleased that Defra has undertaken a review of the general licences, especially as House Sparrow and Starling have now been removed... We are disappointed that the opportunity to remove other species has been missed: Jackdaw [*C. monedula*] and Rook where evidence of damage to agriculture is unconvincing; and Herring Gull [*L. argentatus*], which has declined by nearly 50% in recent years. We have always held concerns that general licences permit the killing of wild birds when they are not causing serious damage and when alternatives to lethal control are readily available and effective.'

Another vulture breeding centre

Work is beginning in West Bengal on a second captive-breeding centre for three Asian species of *Gyps* vulture which have declined catastrophically in recent years (*Brit. Birds* 97: 486). The vultures suffer kidney failure and death after feeding on carcases of cattle treated with diclofenac, an anti-inflammatory drug which was introduced for veterinary use across the Indian subcontinent in the 1990s. Four more breeding centres are planned, in an attempt to create reservoirs of birds for reintroduction once the environment is clear of diclofenac. Meanwhile, 44 birds, 22 each of Indian (Long-billed) *Gyps indicus* and Indian White-backed Vultures *G. bengalensis*, have been brought together at the first captive-breeding centre at Haryana, India. Two additional colony aviaries, with trees and artificial ledges for nesting, have been built at Haryana, providing facilities for a further 40 pairs. However, no Slender-billed Vultures *G. tenuirostris*, the most severely threatened of the three, are yet in captivity. The recovery programme partners are gravely concerned that time is running out, especially for this species.

By 2004, numbers of all three species were down to 1-3% of levels in the early 1990s, and they are continuing to decline by as much as 50% per year. The West Bengal Centre is being built on land provided by the West Bengal Government, on the edge of the Buxa Tiger Reserve. Of the four centres still to be built, two more are planned for India, and one each in Nepal and Pakistan. A fundraising campaign to meet the high costs of building and managing the centres has been launched, and the project partners are negotiating with other international and national conservation NGOs to share the burden of funding and resources. Chris Bowden, the RSPB's Vulture Programme Manager, believes that viable breeding populations of *indicus* and *bengalensis* could be established within 18 months if resources and efforts are fully co-ordinated. Vultures reach sexual maturity after four to five years, and raise at best one young per year, so the recovery programme is a long-term undertaking. Assuming that diclofenac and other anti-inflammatory drugs are eliminated from the environment, reintroductions could begin in ten years.

Top business sites log 259 species

The BTO has announced the winners of its annual Business Bird Challenge. There are 11 categories of business premises in the BTO-Hanson Business Bird Challenge, including quarries, wetlands and power stations. The challenge encourages commercial companies to enhance their sites for wildlife, particularly birds. The site with the largest species list was, predictably, a 'Major Wetland'. But far less predictable was the winner – Lound Quarry in Nottinghamshire, operated by Tarmac. No fewer than 188 species were recorded at

Lound in 2004, beating the total for the regular winner of this category, Rutland Water, by three. Another quarry, Little Paxton in Cambridgeshire, won the Large Quarry category with 158 species. The awards' sponsor, Hanson, won the Quarry (Ripon, North Yorkshire) and Medium Quarry (Brockholes, Lancashire) categories; and had the best Restoration site at Dungeness, Kent. Brockholes also notched up one of the main highlights of 2004, the first Semipalmated Sandpiper *Calidris pusilla* for Lancashire, on 25th July. Huntsman Tioxide's Greatham works on Teesside won the Commercial section, with 149 species.

China Bird Report 2003

The China Ornithological Society, supported by the Hong Kong Bird Watching Society, has just published the very first *China Bird Report*, covering 2003. Its aim is to collate and publish records from birdwatching groups and societies throughout China, as well as those from overseas visitors. This first issue, covering 27 of China's 31 provinces, municipalities and autonomous regions, has been produced to the same remarkably high standard as the familiar *Hong Kong Bird Report*. The body of the report includes entries for 857 species and as each entry is accompanied by a full English translation, this publication is accessible to a much wider audience than its intended Chinese readership. It also contains 40 terrific photographs of species such as Chinese Thrush *Turdus mupinensis*, Yellow-throated Laughingthrush *Garrulax galbanus*, Brown-cheeked Laughingthrush *G. henrici*, Reed Parrotbill *Paradoxornis heudei*, Chinese Nuthatch *Sitta villosa* and Jankowski's Bunting *Emberiza jankowskii*. Let's hope that this magnificent effort sets the standard for future years. The report is available from Richard Stott hkbwsuk@aol.com for £9.00 inc. p&p (£9.68 in EU); Richard can also supply back issues of the *Hong Kong Bird Report*.

(Contributed by Peter Kennerley)

Record proceeds from Birdfair 2004

BirdLife's 'Saving Northern Peru's Dry Forests' project was presented with a record cheque of £164,000 from the 2004 British Birdwatching Fair (www.birdfair.org.uk), which takes the total raised for international conservation projects by the Birdfair in its 16-year history to £1,288,000. Northwestern Peru contains parts of eight Endemic Bird Areas, including the bird-rich Tumbesian region. The area supports 80 endemic bird species and 21 Globally Threatened species, including the Near Threatened Long-whiskered Owlet *Xenoglaux loweryi* (only known from mistnet-captured birds and not yet seen in the wild). Two weeks after presentation of the cheque, BirdLife announced that the dry forests of La Ceiba and Romeros, at the centre of the Tumbesian region in Ecuador, have had their future secured. The 1,680-hectare Hacienda Romeros estate, which still retains 80% of its semi-deciduous forest cover, has been purchased as a nature reserve by BirdLife, in collaboration with Fundación Científica San Francisco and Nature and Culture International. The Small Grants for the Purchase of Nature Programme, supported by The Netherlands Postcode Lottery, helped to fund the acquisition.

New 'super nest' for Lake District Ospreys

January storms wrecked the nest used by the famous Lakeland Ospreys, which have bred at Bassenthwaite Lake in Cumbria since 2001. Ospreys prefer to use the same nest each year, so enterprising Lake District National Park staff have built a new nest – about the size of a double bed – and hoisted it to the top of the nest tree in readiness for the birds' expected arrival back in Cumbria later this month. The new nest has been constructed with a secure timber platform as a base and a cocoon of weld mesh to give added strength. Branches, twigs and moss have been painstakingly applied by hand to recreate the appearance of the lost nest. Pictures from a camera overlooking the nest have been sent around the world via the internet (www.bbc.co.uk/cumbria).

A pinch of salt suits White-headed Ducks

Iraqi conservationists training in Syria have found unexpectedly large numbers of wintering White-headed Ducks *Oxyura leucocephala*. A total of 725 birds was recorded at Sabkhat al-Jabbul, a large salt lake near Aleppo, in January. The global population of this Endangered species, which has declined rapidly in the southwest Asian part of its range, is estimated at 8,000-13,000 birds. 'The concentration of 725 individuals at Sabkhat al-Jabbul constitutes at least 7%, and perhaps as much as 14.5%, of the estimated regional population,' said Richard Porter of BirdLife's Middle East Division.

There is no evidence that White-headed Ducks occurred in large numbers at Sabkhat al-Jabbul in the past. It seems likely that recent changes in the hydrology of the lake, particularly higher and more stable water levels and lower salinities resulting from the discharge of surplus irrigation water into the lake, have created new habitats which are more suitable for White-headed Ducks than the highly saline conditions and widely fluctuating water levels of the past. Porter added: 'Sabkhat al-Jabbul may now be one of the most important wintering areas for the White-headed Duck in the world. The possibility that the species breeds in the area should also be investigated, as local villagers report seeing ducks with white heads during the breeding season.'

Monthly Marathon

Photo no. 213: Marsh Tit

Marathon photo number 213 (*Brit. Birds* 98: plate 19, repeated here as plate 114) is clearly a species of *Parus*, and our choice should immediately be narrowed down to the four species of brown-backed, dark-capped tits, namely Siberian *P. cinctus*, Sombre *P. lugubris*, Marsh *P. palustris* and Willow Tit *P. montanus*. Siberian Tit is easily eliminated, as it shows a brown cap and bib; a warmer, tawny-toned back than that of our mystery bird; and rusty flanks. Sombre Tit is also quickly eliminated having a browner cap than our bird; a white cheek-patch which is wedge-shaped owing to the extensive bib; as well as colder-toned underparts and a greyer back.

So that leaves us with Marsh Tit and Willow Tit – an age-old identification pitfall and yet another puzzle that could easily be solved if we could hear our mystery bird's voice! The angle and lighting of the photograph make it difficult to judge some of the traditional features, such as the extent of the bib, but this character should be used with caution anyway since there is overlap between the two species. Trying to see whether the cap is dull or glossy is equally difficult to judge in this photo, as indeed it can be in the field.



Robin Chittenden

114. Marsh Tit *Parus palustris*, Wroxham Broad, Norfolk, March 1999.

In my opinion, the cheeks look slightly dirty (pointing vaguely towards Marsh Tit) and the underparts are not as pale as would be shown by the *borealis* race of Willow (although on a British *kleinschmidti* the difference from Marsh Tit in underpart coloration is much more difficult to judge). But without the location of the photograph, we have no additional clues.

The one feature that we do have an excellent view of here is the wing. At first glance, there does appear to be a slight hint of some paler fringes to the secondaries, but on closer inspection this impression seems to have been accentuated by the angle and the light. They certainly do not appear to be as pale as you would expect on a Willow Tit and this leads me to believe that this is a fairly straightforward Marsh Tit. With various counties now carrying out censuses of their rapidly declining Willow Tit populations, this photograph is perhaps a useful reminder that separation of these two species, at least if they are silent, is not always that easy.

James Lidster

An emphatic 88% of entrants got this one right, and the seven contestants named last month continue to share the lead, now with a sequence of five correct answers.

Eds



115. 'Monthly Marathon'. Photo no. 215. Thirteenth stage in thirteenth 'Marathon'. Identify the species. Read the rules (see page 54), then send in your answer on a postcard to Monthly Marathon, c/o The Banks, Mountfield, Robertsbridge, East Sussex TN32 5JY, or by e-mail to editor@britishbirds.co.uk, to arrive by 31st May 2005.

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This summary of unchecked reports covers mid February to mid March 2005.

Black Duck *Anas rubripes* Long-stayers on Tresco (Scilly) and at Lough Keele, Achill (Co. Mayo), present throughout. Ferruginous Duck *Aythya nyroca* Abberton Reservoir (Essex), 23rd February to 13th March; Farlington Marshes (Hampshire), 10th March. Lesser Scaup *Aythya affinis* Farnborough (Warwickshire), 28th February to 13th March; Beesands Ley (Devon), 4th-13th March; Scotney Gravel-pits (East Sussex/Kent), long-stayer to 25th February; Lough Barry, (Co. Fermanagh), long-stayer to 10th March.

White-billed Diver *Gavia adamsii* Colla Firth (Shetland), 20th-24th February. Black-browed Albatross *Thalassarche melanophris* South Stack (Anglesey), 12th February; Hopton (Norfolk), 14th February. Cattle Egret *Bubulcus ibis* Lancaster (Lancashire), 8th March; Kingston Seymour (Somerset), long-stayer to 27th February.



George Reszeter

116. Lesser Scaup *Aythya affinis*, Farnborough, Warwickshire, March 2005.

White-tailed Eagle *Haliaeetus albicilla* Long-stayer, seen in various English counties as reported last month, in Oxcombe Valley, 22nd-24th February, Kirkby-on-Bain Gravel-pits (both Lincolnshire), 27th February, Langsett Reservoir, 27th February, Potteric Carr (both South Yorkshire), 8th March, then near Laughton (Lincolnshire) 8th March also. Gyr Falcon *Falco rusticolus* One aboard a fishing vessel 80 km west of the Ramna Stacks (Shetland), 11th February, while in Shetland itself probably two long-stayers seen occasionally to 6th March at various sites; Lewis (Western Isles), 17th February; St Kilda (Western Isles), 11th March.



Allister Irvine

117. Gyr Falcon *Falco rusticolus*, aboard MV *Zepher*, west of Shetland, February 2005.

American Coot *Fulica americana* Benbecula (Western Isles), 25th February to 13th March; Loch of Benston (Shet-

land), long-stayer to 6th March. Killdeer *Charadrius vociferus* Upper Lough Erne (Co. Fermanagh), 25th February to 13th March. Short-billed Dowitcher *Limnodromus griseus* North Bull (Co. Dublin), long-stayer to 13th March. Lesser Yellowlegs *Tringa flavipes* Stiffkey (Norfolk), long-stayer to 13th March.

Laughing Gull *Larus atricilla* Drogheda (Co. Louth), 19th February. Bonaparte's Gull *Larus philadelphia* Helston (Cornwall), 11th February; Harris (Western Isles), 26th February and 1st-5th March; Thurso (Highland), 7th-12th March. 'American Herring Gull' *Larus smithsonianus* Wintering birds at Dingle (Co. Kerry) and Nimmo's Pier (Co. Galway), present throughout. Thayer's Gull *Larus (glaucoides) thayeri* Barnatra (Co. Mayo), 5th-13th March. Ross's Gull *Rhodostethia rosea* Peterhead (Northeast Scotland), long-stayer to 14th February. Forster's Tern *Sterna forsteri* Wintering bird at Nimmo's Pier, present throughout.

Snowy Owl *Bubo scandiacus* Longfield Point, Lough Foyle (Co. Derry), 17th-21st February; Loch Thormaid (Highland), 10th March. Richard's Pipit *Anthus novaeseelandiae* Kinmel Bay (Conwy), long-stayer to 27th February. Waxwing *Bombycilla garrulus* Flocks continued to disperse throughout the country, with groups of up to 50



Stuart Piner

118. Killdeer *Charadrius vociferus* Upper Lough Erne, Co. Fermanagh, March 2005.



Simon Stirrup

119. Iceland Gulls *Larus glaucoides* were still widespread during late February, this one at Killybegs, Co. Donegal.



Jim Lawrence

120. Thayer's Gull *Larus (glaucoides) thayeri*, Barnatra, Co. Mayo, March 2005.



Steve Young/Birdwatch

121. Adult Ross's Gull *Rhodostethia rosea*, Peterhead, Northeast Scotland, February 2005.

reported from practically everywhere, but with the largest gatherings in midland and southern counties of England, including: 500 Stoke-on-Trent (Staffordshire), 11th February; 600 Nottingham (Nottinghamshire), 17th February; 316 Maidenhead (Berkshire), 17th February; 220 Leicester (Leicestershire), 23rd February; 300 Milton Keynes (Buckinghamshire), 25th February; 310 Southampton (Hampshire), 10th March.

Dusky Warbler *Phylloscopus fuscatus* Kessingland (Suffolk), long-stayer to 13th March. Arctic Redpoll *Carduelis hornemanni* Titchwell (Norfolk), long-stayer to 13th March. Little Bunting *Emberiza pusilla* Caunsall (Worcestershire), 14th-26th February, with up to three there 27th February to 7th March, and at least two to 11th March.

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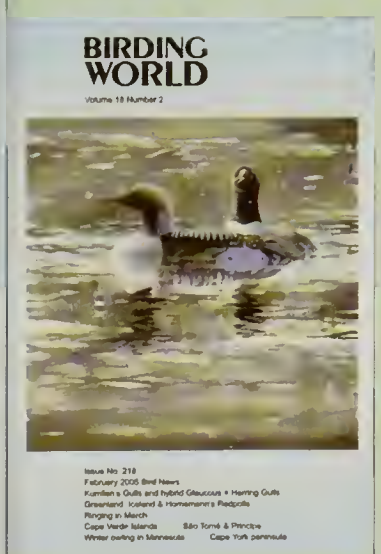
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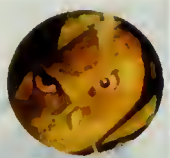
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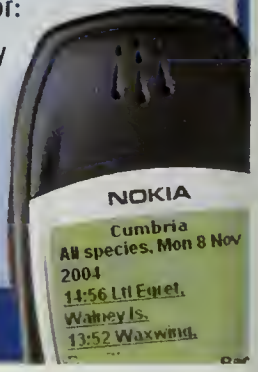
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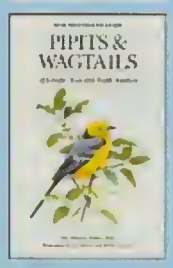
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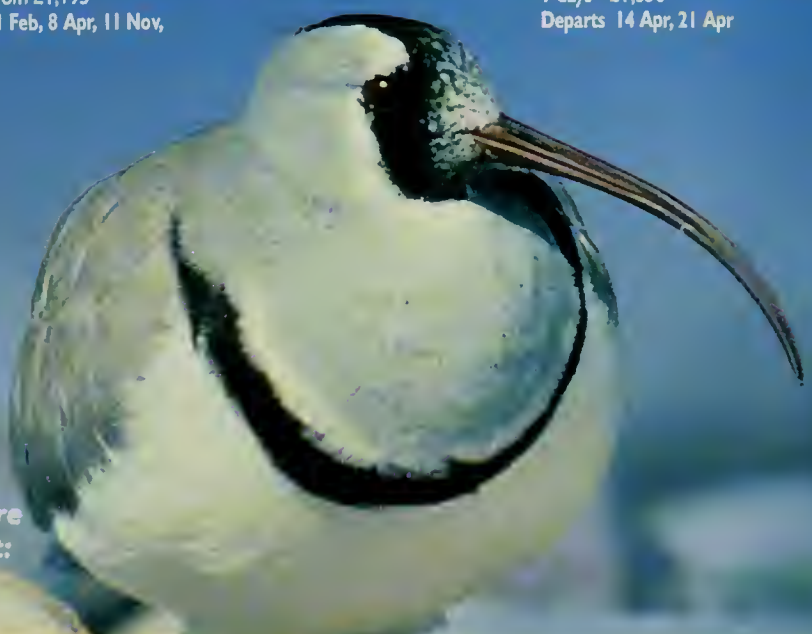
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The Tadcaster rarities

Weather and bird migration



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Front-cover photograph: Male Ruff *Philomachus pugnax*, Finland, May. *David Tipling*/Windrush

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The Tadcaster rarities

Tim Melling, on behalf of BOURC

In 1999, *British Birds* published a 150-year-old note from *The Zoologist* by Sir William Milner, praising a Mr Graham for his zeal and activity in adding three new species to the British List (*Brit. Birds* 92: 523). The person referred to was David Graham, a taxidermist of Spurriergate, York, and the three species were Macqueen's Bustard *Chlamydotis macqueenii*, Ross's Gull *Rhodostethia rosea* and Orphean Warbler *Sylvia hortensis*. An editorial footnote to that item of 'Looking back' suggested that the authenticity of these records should be investigated by BOURC. This led to a fascinating detective story, which uncovered far more than the uncertainty about the three species mentioned. The first stage of the BOURC investigation was to find out whether Graham had been involved in any other notable records, and then to determine Graham's involvement in each of the three British 'firsts' by reviewing the original accounts in *The Zoologist*.

Graham's track record: other birds

We discovered that Graham sold a specimen (plus an egg) of the (then recently extinct) Great Auk *Pinguinus impennis* to Milner, stating that it had been obtained in Orkney. Fuller (1999) gave a full account of the history of this specimen, which was of unknown origin. Fuller stated that: 'James Gardiner (another well-known London dealer) promptly sold it to York stuffer David Graham, a man whose trade label [see below] – showing a Little Spotted Kiwi *Apteryx owenii* – clearly reveals him as something of a specialist in the rare and curious. Regrettably, perhaps, he invented a provenance for his bird, one aimed – doubtless – at enhancing its desirability; indeed Mr Graham developed a general reputation for being sparing with the truth. Without (as far as is known) the slightest scrap of evidence, Graham boldly announced that this particular [Great] Auk came from the Orkneys. Whether this British provenance actually helped him to make a sale is unrecorded but he quickly found a wealthy customer. Sir William Milner of Nun Appleton, Tadcaster, Yorkshire, became the bird's new owner in 1856.' This specimen was bought by the National Museums of Scotland in 1895, following Milner's death.



Further investigation revealed that Graham was involved in a number of unusual or unlikely records. One such example is that involving a female Spotted Sandpiper *Actitis macularius* killed by a sailor on the beach just north of the pier at Whitby, North Yorkshire, on 29th March 1849. It was said to have been very tame, and when shot was in the company of a flock of Dunlins *Calidris alpina*. The habitat, behaviour and associated species do not seem particularly convincing for Spotted Sandpiper. The bird came to Graham the following day, and he prepared it for Milner's collection (*The Zoologist* 6: 2147). This record is currently still accepted.

Graham also reported a Richard's Pipit *Anthus novaeseelandiae* on the Yorkshire coast in 1849 (*The Zoologist* 7: 2569). Nelson (*Birds of Yorkshire*, 1907) was less sympathetic to this record and considered the circumstances connected with it to be too unreliable to warrant its inclusion on the Yorkshire List (at this time, Richard's Pipit was an extremely rare bird in Britain). A Lesser Yellowlegs *Tringa flavipes* from Tadcaster in October 1858 (*The Naturalist* 8: 291; *The Zoologist* 16: 5958) was another

of Graham's records but this did not even warrant a mention in Nelson (1907). Nonetheless, a Tengmalm's Owl *Aegolius funereus* shot in Hunmanby Woods, Yorkshire, in 1847 (*The Zoologist* 8: 2649); an Icelandic Gyr Falcon *Falco rusticolus* shot in November 1860 at Upper Poppleton, Yorkshire (*The Zoologist* 19: 7312); and a Night Heron *Nycticorax nycticorax* shot on 21st May 1855 at Birdsall, Malton, Yorkshire, were also reported by Graham (Clarke & Roebuck 1881), and these records are currently still accepted.

A Bulwer's Petrel *Bulweria bulwerii* obtained at Scarborough, East Yorkshire, in spring 1849, and reported by Graham (*The Zoologist* 7: 2569) was ignored by all the authorities of the day. Clarke & Roebuck (1881) reported 'this record is eminently unsatisfactory, from the absence of details necessary to substantiate the occurrence of so rare a bird'. Perhaps even more unusual was a female Barrow's Goldeneye *Bucephala islandica* reported by Graham as shot at the mouth of the River Derwent, North Yorkshire, in 1864 (*The Zoologist* 22: 9038). Witherby *et al.* (1938-41) published neither of these records in *The Handbook*. An American Swallow-tailed Kite *Elanoides forficatus*, allegedly shot on 25th May 1859 near Helmsley, North Yorkshire, by 'Little George' (a gamekeeper at Duncombe Park), also passed through Graham's hands. It was sold to a local schoolmaster, Jonathan Taylor, who then regretted selling it to Graham for just a few shillings, not knowing its value at the time (Nelson 1907). Interestingly, there were two further claims of this species in Yorkshire mentioned in Nelson, but none was accepted onto the British List.

Perhaps the most telling record of Graham's was a Brünnich's Guillemot *Uria lomvia* and egg, reportedly taken on Soay, St Kilda, on 15th June 1847. This was reported by Milner (*The Zoologist* 6: 2054-2062), and Eagle Clarke refers to the claim in his *Studies in Bird Migration* (1912). Clarke wrote: 'The notorious David Graham, of York, was with Mr (afterwards Sir William) Milner and his friends, and most likely it is to him that we are indebted for this and for some other questionable statements.' Clarke was joint secretary of the Yorkshire Naturalists' Union from 1880 until 1888, when he left for Scotland (Chislett 1961). Clarke also published *The Handbook to the Vertebrate Fauna of Yorkshire* in 1881 with W. Denison Roebuck, so he was certainly familiar with Graham's records,



Phil Palmer

122. Macqueen's Bustard *Chlamydotis macqueenii*, York Museum. This specimen still stands as the first British record after recent investigation by BOURC.

and the quote reproduced above from his 1912 work is particularly damning of Graham. Furthermore, Professor Alfred Newton, author of *The Dictionary of Birds* (A&C Black, London, 1896), was an avid collector of eggs and skins on behalf of Cambridge University. He corresponded with most, if not all, of the authorities on birds in the latter part of the nineteenth century. Newton's correspondence is archived at Cambridge University and it reveals that he also had a very poor view of David Graham and his records (Errol Fuller pers. comm.).

Graham's role in three firsts for Britain

The next stage of the investigation was to establish Graham's involvement in three British firsts referred to above: Macqueen's Bustard, Orphean Warbler and Ross's Gull.

Macqueen's Bustard

This record gave no cause for concern. The bird was shot on 7th October 1847 by Mr G. Hansley in a stubble field near Kirton Cliff, Lincolnshire. It was then passed to Alfred Roberts of Brigg, who pronounced the bird to be a Little Bustard *Tetrax tetrax* on 7th December 1847 (*The Zoologist* 5: 1969), giving a short description and a brief analysis of what it had eaten recently. On



Phil Palmer

123. Orphean Warbler *Sylvia hortensis*, Leeds Museum. This female was supposedly shot on 6th July 1848, at Wetherby, North Yorkshire, whilst in the company of a male and the pair was implied to have been breeding. The improbability of such an event in Britain, particularly so far north, the fact that this is the only summer record of this species in Britain, and the lack of a named collector all point against the authenticity of the record.

25th January 1848, Mr Roberts admitted that he had made a mistake, and that the bird was, in fact, a Houbara *Chlamydotis undulata* (*The Zoologist* 6: 2065-2066). John Gould later examined the specimen and reidentified it as a Macqueen's Bustard, which was again announced in *The Zoologist*, just a few months later. The recent taxonomic split of Macqueen's Bustard from Houbara led to a reassessment of this specimen, now at York Museum, which was confirmed by BOURC as the first British record of Macqueen's Bustard (*Ibis* 146: 192-195). There was no mention of Graham in these original accounts, but Sir William Milner's note in *The Zoologist* in 1849 acknowledged that the bustard had passed through Graham's hands. It was assumed that it was Graham who reidentified the Little Bustard, as the bird was bought in 1848 by Mr T. E. Higgins of York, presumably from Graham. The circumstances of the shooting of the bird, and the subsequent publication of the record, even though the bird had been misidentified before Graham's involvement, satisfied BOURC that the record was genuine.

Orphean Warbler

This record was more problematic. It was a female, reported as having been shot on 6th July 1848 in a small plantation near Wetherby, North Yorkshire. There is no information regarding the man who shot the bird, other than that the specimen was mounted by him (badly), and also that he reportedly saw a male Orphean Warbler for 'some considerable time' in the female's company before obtaining the specimen. In *The Zoologist*, Sir William Milner stated that: 'Mr Graham, my bird stuffer, at York, on hearing that a very uncommon bird had been shot, went over to Wetherby, and, fortunately, obtained the specimen for my collection.' From the state of its plumage, the bird was said to have the appearance of 'having been engaged in incubation' (*The Zoologist* 7: 2588-2589). Mather (1986) stated that there was absolutely no proof that the bird was breeding, but the description of the male left William Milner in no doubt that this bird was also an Orphean Warbler. It is known, according to Edward Newman, editor of *The Zoologist*, that Sir William Milner had an 'almost unrivalled collection of British birds' (*The Zoologist* 9: 3107-3111), and it is clear that Milner would have been willing to pay handsomely for additions to his collection if his taxidermist was prepared to travel 12 miles to Wetherby, presumably by horse or carriage, on the strength of a rumour of an uncommon bird being shot. Of the five other accepted British records of Orphean Warbler, four have been in September or October, and the remaining bird in May. The midsummer appearance of the Wetherby bird is somewhat unusual, but it is certainly not unprecedented for rare *Sylvia* warblers to be found summering in Britain having overshot their breeding grounds in spring and then lingered in suitable habitat. Nonetheless, the lack of a named collector, the unlikely account of implied breeding and the unusual time of year gave BOURC members sufficient doubts about this record to vote that it should no longer remain acceptable. This specimen is now in the Leeds Museum.

Ross's Gull

The Ross's Gull was perhaps the most difficult

of the three records to assess. William Milner originally reported it as 'The Roseate Gull *Larus rossii* killed on the 22nd December 1846, by Mr Thomas Robinson, of Saxton, near Aberford, in this county.' The wording is ambiguous, since it is not clear whether the gull was killed near Aberford, or whether it was killed 'in this county' (Yorkshire) and that Robinson was from Saxton, which is some three miles east of Aberford. If Milner did *not* mean that the gull was shot near Aberford, then this is the only report of a rare bird where he does not specify the location. Following its collection by Robinson, it was then 'discovered' by Graham, who brought it to Milner. Milner then published the record in *The Zoologist* on 30th March 1847, just three months after it was reputedly obtained, so one would expect the facts to have been reported accurately. We know that money must have changed hands, because the specimen was sent to W. Yarrell with the permission of its owner (Graham) and then to William Milner, to whom the opportunity of purchasing the specimen had been promised. Nonetheless, in correspondence to Edward Charlesworth, of the Yorkshire Philosophical Society, in May 1847, Yarrell said: 'Its capture is authenticated in the following memorandum, received from Henry [*sic*] Milner Esq.: "Ross's Gull was killed by Horner, Lord Howden's head keeper, in February last (1847), in a ploughed field, near the hamlet of Milton-cum-Kirby, in the parish of Kirby. Its flight resembled, according to Horner's account, the flight of any other gull, and it did not seem at all shy" ' (*The Zoologist* 5: 1782-1785). The name Henry Milner appears to have been an error by Yarrell, because in his *A History of British Birds* (1856) he attributes this verbatim quote to William Milner. So just two months after the original report in *The Zoologist*, a second report by Milner gave a different date, location and collector.



Phil Palmer

124. Ross's Gull *Rhodostethia rosea*, Leeds Museum. This specimen may be that acquired by Graham and sold to Milner, although there is no direct evidence that it is. The inconsistency of information on collector, finding date and place, and the supposed collection of an individual so far inland during the winter months render the provenance of their bird as highly suspect.

To complicate matters further, the specimen notes accompanying the bird in Milner's collection state: 'was killed by Lord Howden's gamekeeper in a ploughed field at Grimston, near Tadcaster, Yorkshire, in January 1847, and purchased by D. Graham, naturalist, York'. This differs from the earlier account, which referred to Lord Howden's *head* keeper, and that it was shot in *February* 1847. So at this point we have three possible dates, two or three possible collectors, and perhaps three different localities. Grimston and Milton-cum-Kirby are within a one-mile stretch of the River Wharfe near Tadcaster, North Yorkshire, whereas Aberford is five miles to the southwest.

When BOURC assessed this record in 1999, there had been 85 accepted records of Ross's Gull in Britain, none of which had been recorded any significant distance inland. One in Shetland frequented a loch and marsh (presumably not unlike its breeding habitat, although less than 2 km from the sea) for a few days in May 1998, and two individuals had been recorded at Holywell Pond, Northumberland, also within 2 km from the sea. All the remaining 82 records were recorded on, or virtually on, the coast. A subsequent record at Blacktoft Sands, East Yorkshire, on 31st March 2002 was within a stone's throw of the tidal Humber Estuary. The Committee considered that if one was *ever* to occur inland, it would most likely be in spring when birds might migrate overland, perhaps seeking suitable breeding habitat. A winter record well inland was considered extremely

unlikely on current knowledge and has never been repeated.

Densley (1999) posed the question as to why the bird was killed in the first place, as its identity in the field would have been difficult to detect without the optics and literature available today. Densley's explanation for this was that, according to Adrian Norris (Leeds Museum), Milner was in the habit of periodically asking his keepers to go out and shoot some birds, to boost the total number of specimens in his collection. That one of these 'random' birds shot by a keeper just happened to be Britain's first and (so far) only Ross's Gull seen well inland seems implausible. This speculation is somewhat irrelevant, however, as none of the three suggested localities were on Milner's estate at Nun Appleton. The Grimston and Milton sites were both on Lord Howden's estate, more than two miles from Nun Appleton, and on the opposite side of the River Wharfe.

Nelson (1907) claimed that 'considerable scepticism has since prevailed with regard to the reliability of Graham's assertion that the bird was obtained in Yorkshire, and it had been surmised that Sir W. Milner was imposed upon by the professional bird stuffer.' On 7th November 1885, an editorial comment in *The Field* stated that 'no faith is to be placed in the oft-quoted statement that one was obtained in Yorkshire'. There then followed a lively exchange of letters between Mr F. J. Saville Foljambe (a relative of Milner) and the editors of *The Field*. Foljambe said that Graham, who had since died, had seen the specimen 'in the flesh'. The editors retorted that it was precisely because it had been obtained by a dealer that its alleged history had been doubted. They also drew attention to the two contradictory accounts that had been published in *The Zoologist*. A further letter in support of Graham was written by Mr C. R. Garwood, claiming that his brother had seen the specimen in Graham's shop about 40 years earlier. The tenor of the correspondence was that the specimen had been seen in the flesh, but this 40-year-old second-hand testimony from Garwood's brother appears to be the only corroboration. It is certainly possible that this witness may have been confused over such a period of time, and that his brother may actually have seen a prepared skin, or even a mounted specimen rather than the freshly dead bird. Nelson (1907) endorsed this by saying that 'the fact that the specimen was in winter plumage is proof of the reliability of his (Graham's) statement, as at the time of its occurrence, that plumage phase was unknown'. Densley (1999) also thought that it would have been more convincing to supply a bird in summer plumage, as the features of this were already well known. The implication here seems to be that if Graham had perpetrated a fraud, then he would have chosen a specimen in a described plumage. At this time, however, just a handful of specimens were known to science, so Graham would not have been spoilt for choice.

It is interesting to note that in the first-ever BOU checklist (BOU 1883) this record is included within square brackets, as one of 'those species which the committee does not regard as positively authenticated as British'. The report includes this species as 'Cuneate-tailed Gull: a single specimen, now in Leeds Museum, is stated, on questionable authority, to have been killed in Yorkshire.' Curiously, Clarke & Roebuck (1881) said that there was no reason for doubting the genuineness of the Cuneate-tailed [Ross's] Gull, yet Clarke was thoroughly suspicious of Graham over the Brünnich's Guillemot record (see above).

One of the most difficult things to explain is why anyone might wish to fabricate details of a bird with a near-mythical global status. Ross's Gull was first described in 1824, with a specimen from Melville Peninsula, in Arctic Canada, and just a handful of other specimens were known by 1846. The first nest was found in 1885, an isolated record from Greenland. The main breeding grounds in Siberia were not discovered until 1905. Surely there would be no need to perpetrate a fraud with a bird as rare as this? It would be highly prized and valuable, no matter where it was from. It was suggested that the bird may have arrived on a vessel from one of the Yorkshire ports, possibly preserved by ice. A specimen taken 'at sea' might not have the same value to a collector like Milner, particularly when compared with a first for Britain collected in Yorkshire. Regardless of where the Ross's Gull came from, a specimen with British provenance would be more appealing to British collectors, and would certainly command a higher price. Such circumstances might have led Graham to falsify data for the specimen, just as he had done for the Great Auk he sold to Milner.

The BOURC decided that, on the strength of the evidence uncovered, there were sufficient

grounds for removing this record from the British List. A Ross's Gull now in Leeds Museum, having previously been at Wakefield Museum, may be this specimen, but there is no direct evidence (see Densley 1999 for discussion). Yarrell's and Milner's original descriptions said that the bird in question was pink, whereas the Leeds specimen does not appear to be at all pink, although admittedly the specimen could have faded.

Another British first

Graham was also involved with another first for Britain: a Lesser Kestrel *Falco naumanni* shot by John Harrison of Wilstrop Hall, near Green Hammerton, Yorkshire, in mid November 1867. Harrison took the bird to Graham, who identified it as Lesser Kestrel and then persuaded Harrison to 'present it' to the York Museum, where it still resides.

Clarke & Roebuck (1881) mentioned this record in some detail: 'Regarding the Lesser Kestrel – another species whose occurrence has been challenged – the writers are perfectly convinced, from their personal acquaintance with the gentleman who obtained it, that it was a genuine one. Mr Harrison shot the bird solely on account of its diminutive size and after he had observed it about his residence for some days. It has been suggested that Graham, of York, to whom the specimen was taken for preservation, substituted it for a foreign skin; but Mr Harrison, whose attention was particularly impressed by the bird, and who is, moreover, a good ornithologist, could hardly have been imposed upon in such a manner. The time of year has been urged as an argument against the validity of the occurrence, but it may be pointed out that the Hobby – usually regarded as a summer visitant – has on several occasions been taken in Yorkshire in mid-winter.'

In autumn, Lesser Kestrel migrates through the Strait of Gibraltar from early August onwards, with passage peaking in mid September, and tailing off completely by early October (Finlayson 1992). This makes a mid November record in Britain unusual, although not without precedent (three British records prior to 1910 were recorded in October or November). It is interesting that, even by 1881, the record had been challenged, with the suggestion that Graham may have switched specimens. It would not make sense for Graham to switch specimens unless it was he who sold the



Phil Palmer

125. Lesser Kestrel *Falco naumanni*, York Museum. The abnormally worn primaries and blunt claws, together with an unrecorded date of collection, throw doubt on a wild origin for this specimen.

kestrel to York Museum. As part of our investigation, we checked with York Museum to see whether Graham benefited financially from the transaction. Stuart Ogilvy, Assistant Curator of Natural Sciences, informed us that there were no contemporary records relating to its arrival at the museum, so there was no evidence of any financial transaction. He also commented that there is no mention of it in the list of donations to the Zoology Department, which is unusual. Nelson (1907) stated that Graham persuaded Harrison to present it to York Museum, whereas Mather's (1986) account said that Graham persuaded Harrison to *donate* it; consequently, we still do not know for sure whether Harrison or Graham benefited from the transaction.

An additional complication came when Mike Denton, during research for his *Birds in the Yorkshire Museum* (1995), examined the specimen and commented that the bird had abnormally worn claws and primary abrasion, perhaps suggesting captive origin (Denton pers. comm.). Nelson (1907) mentioned that a buzzard in the aviary of the late John Harrison nested and laid two eggs, establishing that Harrison had an aviary. John Harrison's obituary (*The Naturalist* 1891, pp. 185-186) also men-

tioned that he was widely travelled and had visited the Lower Danube, a place where Lesser Kestrels would have been common.

Bob McGowan checked the claw condition of 26 Lesser Kestrels in the collection of the National Museums of Scotland. Twenty had normal sharp claws, four had sharp (but shorter) claws, and one, collected in Greece, had short, bluntish claws. The final specimen had short, bluntish claws and highly abraded plumage, with a worn tail typical of a captive bird; it also lacked accompanying data. Based on this study, we concluded that museum specimens of wild birds typically have sharp claws. The York specimen has extremely worn claws, a fact that caused even more doubt in the Committee's minds as to the validity of the record.

The acceptance of this record at the time seemed to rest on the endorsement of Harrison's character and ornithological ability by Clarke & Roebuck. Nonetheless, Harrison was said to have been struck by the diminutive size of the bird, which is why he shot it. Lesser Kestrels are certainly more finely proportioned than Common Kestrels *F. tinnunculus*, but there is overlap in both size and weight (*BWP*). It is doubtful whether even experienced observers would be able to say whether an isolated individual was smaller than a Common Kestrel. Harrison's obituary also said that he was a 'close and careful observer', so it seems odd that he did not bother to record the date of this specimen. This record was assessed by BOURC in 2003 and members voted unanimously to reject it (*Ibis* 145: 182).

Comparison with the Hastings Rarities

There are some interesting parallels between the Tadcaster Rarities and the notorious Hastings Rarities affair, which comprised an extraordinary run of nearly 600 records between 1892 and 1930, many of them rarities and most of which passed through the hands of one taxidermist, George Bristow, who lived in St Leonards on Sea, East Sussex. Some of the Hastings birds were alleged to have been collected by Bristow himself, but at least 45 other collectors were named. Apparently, the birds showed no signs of being frozen, and shipments from abroad would have been likely to have taken several weeks. It is worth noting, however, that a number of Rothschild's specimens came from Leadenhall Market during this period. One example concerns two Wilson's Storm-petrels *Oceanites oceanicus* of the most southerly race *exasperatus*, which were labelled as bought frozen on 2nd March 1905 (*Brit. Birds* 56: 33-38), so it was certainly possible to transport frozen birds long distances at this time. In 1916, Harry Witherby, then the editor of *BB*, wrote to Bristow laying down various conditions that had to be met for subsequent records to be accepted (i.e. all birds should be shown to Ticehurst in the flesh, and skinned in his presence if requested, and also that the names and addresses of the shooters should be provided). Bristow agreed, but did not comply, so Witherby did not accept his subsequent records. It was not until 1962 that the Hastings Rarities were damned by a statistical analysis in *BB* which compared these records with those from adjacent parts of Kent and Sussex during the same period (Nelder 1962). A second paper in this same issue of *BB* investigated the suspicious circumstances surrounding many of these records (Nicholson & Ferguson-Lees 1962).

With the Tadcaster Rarities, we have a series of extremely unlikely records over the period from 1846 to 1869, all with Graham's involvement. We also have a near-contemporary criticism of his character, and evidence that his records were not universally accepted at the time. The Great Auk saga also showed that he was not averse to falsifying data to increase the value of his specimens. On the positive side, several of his records involved people whose character seemed to be beyond question (e.g. John Harrison), and the Ross's Gull at least was apparently seen in the flesh. Like the Hastings Rarities, the Graham affair still has unanswered questions, and Graham still has some supporters. Some records involved circumstances or species that have never been repeated, such as Swallow-tailed Kite, breeding Orphean Warbler and Brünnich's Guillemot, plus a winter Ross's Gull well inland. This is an extraordinary run of records of monumental ornithological importance. There is no actual proof that Graham was involved in fraud in the three firsts for Britain rejected by BOURC, but the circumstantial evidence is overwhelming.

Acknowledgments

I am grateful for helpful comments from all members of BOURC, in particular Bob McGowan for researching the skin collection at the National Museums of Scotland, and for contacting Yorkshire Museums. I am also grateful to Steve Dudley for providing comments on several early drafts of this paper. Ian Dawson provided a wealth of ref-

erences and constructive comment. Errol Fuller provided helpful comments on an early draft and provided some useful insights into Graham's reputation from his research into the Newton archives. Phil Palmer also provided some valuable references to Graham's other records.

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Looking back

Fifty years ago:

'MYRTLE WARBLER IN DEVON: A NEW BRITISH BIRD By F. Raymond Smith

'On 4th January 1955 a blizzard swept over southern England and covered the Exeter area of Devon with three inches of snow. At the School House, Newton St. Cyres, four miles from Exeter, Mrs. D. Cook placed food on her bird-table for the benefit of the Blue Tits (*Parus caeruleus*) and other birds which regularly visited the table. She recollects hearing an unusual bird-note on the afternoon of this date. On 5th January her son, David Cook, noticed on the table a strange bird which he was unable to identify. This bird frequently gave the call note which Mrs. Cook recollects having heard the previous day. On 8th January David's father, Dr. D. Cook, rang me up to say that his son had drawn his attention to this bird and I asked him for a more detailed description. On 11th January he again telephoned and gave me further details; as a result, accompanied by my son, A. V. Smith, I went to see the bird.

'It was visiting the bird-table regularly and could be watched without glasses at distances down to less than three feet as the table was touching the wall immediately beneath the dining-room window. It was at once apparent to us that the bird was of an unfamiliar species as it had areas of bright lemon yellow on each side of the body as well as a bright yellow rump and crown, while the fanned tail showed considerable areas of white. It was thought possible that it might be an American warbler. Full details were therefore taken and sketches made and, later the same day, my son and I paid a visit to the Royal Albert Memorial Museum, Exeter, where through the kindness of Major A. B. Gay ready access was given to the excellent collection of skins of American warblers and also to a copy of Audubon's *Birds of America*. By means of the coloured plates in the latter it was possible to identify the bird as a Myrtle Warbler (*Dendroica coronata*). The identification was afterwards confirmed by examination of the fourteen skins of this species in the collection and from these it was possible to pick out a male bird in winter plumage which was almost identical with the live bird feeding at the table four miles away...

'I again watched the bird on 12th January, this time being accompanied by R. F. Moore. On 13th January a further fall of snow to a depth of four inches took place, but Mrs. Cook was at pains to keep the bird-table clear of snow and to put out food in order to encourage the bird to stay. It was on this day that Mrs. Cook placed on the table a piece of bread and butter on which marmalade was spread; to her astonishment the Myrtle Warbler immediately took to the marmalade, which it frequently sipped off the bread by bending down its head sideways; this affinity for the marmalade persisted throughout its stay but to a diminishing extent, as with the onset of milder weather it began to obtain most of its food in a more natural manner from the ground while later still it spent a lot of time at a compost heap. At other times it was also seen to eat suet and the fat from bacon-rind and on one occasion to take a small white moth...'

(*Brit. Birds* 48: 204-207, May 1955)

Weather and bird migration

Norman Elkins



Barn Swallows *Hirundo rustica* *Richard Johnson*

ABSTRACT Bird migration in and through Britain and Ireland shows great variation, both seasonally and annually. Much depends on atmospheric conditions, which can equally hinder and assist migration, both on a broad scale (the distribution, extent, intensity and movement of pressure patterns), and at a local level (temporal and spatial changes in wind, visibility, cloud and precipitation). All the parameters of bird migration, including timing, routes, speed and duration of migration, are affected, and modified, by a number of meteorological factors, probably the most influential being wind speed and direction. This paper reviews the influence that weather has on bird migration in Britain and Ireland, and discusses examples of the major types of migration. A number of unusual or exceptional migration events are discussed and illustrated with appropriate weather charts.

Introduction

Migration is one topic that never fails to appeal to the whole spectrum of those with an interest in birds, from the inveterate 'twitcher' to the general public. Bird migration, defined simply as regular movements from one area to another, generally occurs in response to the availability of food resources and encompasses an enormous variety of methods. These range from long-distance expeditions traversing half the planet, such as those by Arctic Terns *Sterna paradisaea* and Barn Swallows *Hirundo rustica*, to local movements in response to the temporary freezing of freshwater bodies. Differences in migration strategy and behaviour result in some species undertaking nocturnal migration, while others move mainly during daylight hours. These differences operate not only

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126. Nocturnal migrants, such as these Red Knots *Calidris canutus*, are more selective than diurnal migrants about the weather conditions for migration, for the simple reason that to navigate using the setting sun or star patterns requires skies which are at least partly cloud-free. *Robin Chittenden* www.harlequinpictures.co.uk

between species, but also among populations of the same species. The continued proliferation of books and papers on the subject, in particular the widely acclaimed *Migration Atlas* (Wernham *et al.* 2002), is testament to this interest but also to the continuing search for answers to the many unanswered questions.

Britain and Ireland are exciting places to observe migration, being a cluster of essentially maritime countries straddling the divide between the North Atlantic and the North Sea. Small islands and island groups off the north and west coasts have magnetic appeal for birders seeking scarce migrants and rarities. In terms of bird migration, the nearest significant landmasses are Scandinavia to the northeast, Iceland to the northwest, and continental Europe to the east and south. Despite the vastness of the North Atlantic, this provides a route for seabird migration and also occasional weather conditions conducive to transatlantic movements of landbirds. Their geographical position has resulted in Britain and Ireland becoming a vital stopover for both regular migrants and vagrants. The conditions under which these birds migrate change from day to day, and from season to season, giving rise to the variety of migrants with which we are so familiar, and providing a complex and ever-changing backdrop to our birding.

Weather and its effects

Weather can be defined as variations in atmospheric conditions over short time periods, i.e. hourly, daily or perhaps weekly. It differs from climate, which describes the average state of atmospheric conditions over a longer timescale, generally of many years. Long-term changes in the frequency and intensity of weather parameters can, however, also be responsible for climate change. The effects of weather on bird migration have been well described (e.g. Alerstam 1990, Berthold 2001, Elkins 2004), although innumerable cases arise in which the meteorological influences on specific movements are not immediately obvious. Both spring and autumn migration in Britain and Ireland involve inbound and outbound movements as well as passage migration, which include normal and involuntary movements. All are subject to prevailing weather conditions over the areas of inception, travel and arrival. Weather can change rapidly, both spatially and temporally, making analyses of migration diffi-

cult or even impossible. In reality, the relationship between a migratory movement and the prevailing weather is frequently obscure. Many first-recorded dates of less common migrants may be linked more to onward passage than to actual arrival dates. Nonetheless, specific weather situations regularly affect migration in certain ways throughout the year and careful analysis can clarify the perceived patterns of arrival or departure.

Autumn migration

Departure from breeding grounds

The majority of birds leaving Britain and Ireland in autumn are summer visitors departing to avoid the winter, when many invertebrates (aerial, foliage and soil) become scarce or inaccessible, and habitats may become untenable (for example as fresh water freezes or snow covers the uplands). In general, the autumn departure of most species from the breeding grounds goes unnoticed, being apparent only in the case of diurnal migrants such as hirundines (Hirundinidae), pipits *Anthus* and finches (Fringillidae). These groups generally move in quiet weather and light winds (often headwinds), when coasting movements can be widely observed. For example, during a five-day anticyclonic period at the beginning of September 2003, huge numbers of hirundines passed Spurn, East Yorkshire, on 3rd and 4th. Estimated counts included 45,000 Barn Swallows and 15,000 House Martins *Delichon urbicum*, while smaller numbers were recorded at Dungeness, Kent, on the English Channel

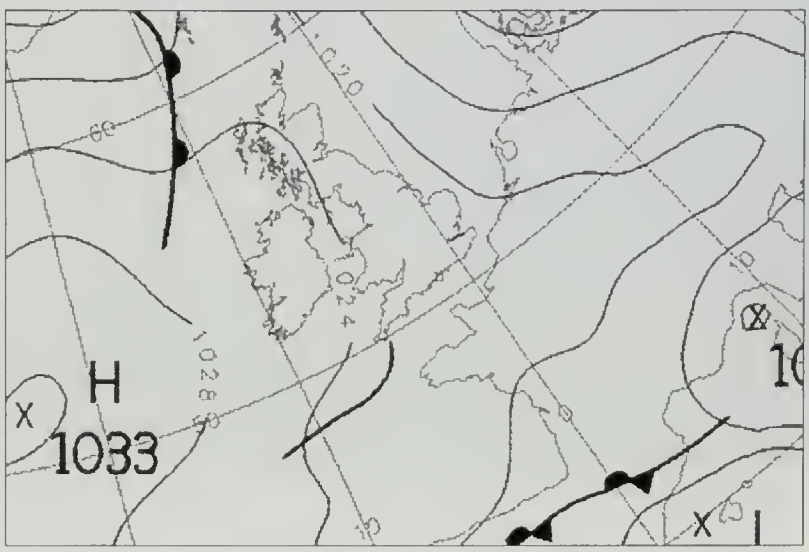
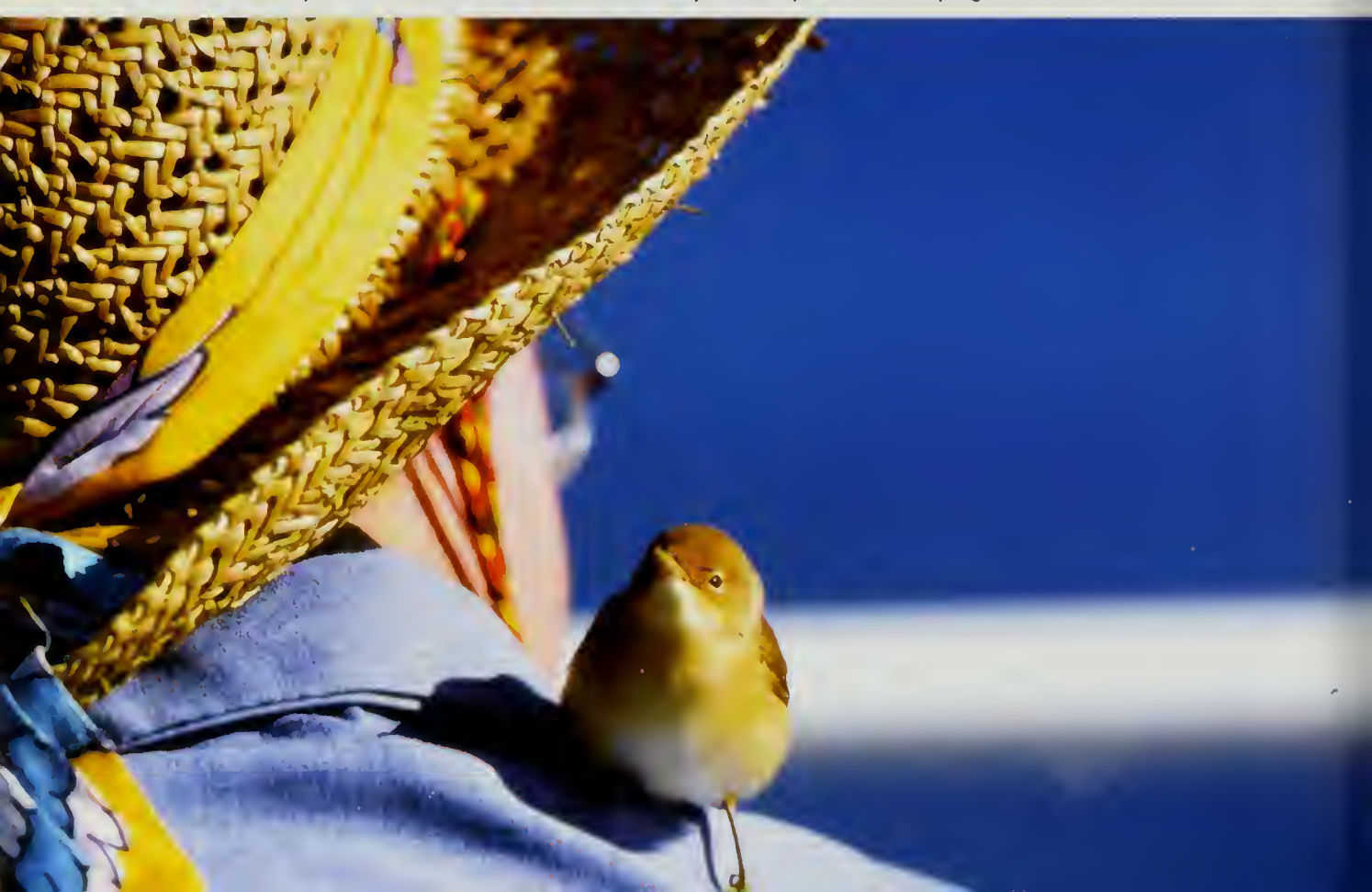


Fig. 1. A typical fine, anticyclonic weather system, with light northerly airflow over Britain, initiating southward autumn migration; 00.00 hrs, 1st September 2003.

127. Reed Warbler *Acrocephalus scirpaceus*, aboard a ferry in the Bay of Biscay, August 2001. Passerine migrants make landfall in unexpected places when weather conditions are against them, and when weakened to the point of near-exhaustion are not choosy about a perch. *David Tipling*/Windrush





128. Like other species of geese, these Pink-footed Geese *Anser brachyrhynchus* will have waited for good weather conditions (ideally, clear skies with a following wind) before leaving their northern breeding grounds for the journey to wintering grounds in eastern Britain, although unforeseen bad weather en route may hamper their progress, as described in the text. *Robin Chittenden* www.harlequinpictures.co.uk

coast, on the same dates. Most of these birds navigate using landmarks, often coasting and crossing bays when the distant shore is visible. Inland migration can also be observed, with birds following river valleys and other geophysical features that lie along the preferred direction of migration.

Nocturnal migrants tend not to use cues from the land above which they fly, and are rather more choosy about the weather, since navigation using the setting sun or star patterns necessarily requires skies which are at least partly cloud-free. In addition, winds blowing approximately in the direction of travel confer an added bonus and, indeed, are vital for some long-distance migrants (see fig. 1). A southward-moving cold front, for example, not only introduces tailwinds (often strong) with a northerly component, but also a marked fall in temperature that may trigger a reduction in food resources. Other groups, such as seabirds, are less dependent on the weather, but their routes are still affected by wind speed and direction.

Migrants from the north

Apart from the departure of breeding birds, huge numbers of other migrants pass through Britain and Ireland in autumn. Many species arrive here for the winter from breeding grounds in the Canadian Arctic, Greenland and Iceland, including Whooper Swans *Cygnus cygnus*, Pink-footed *Anser brachyrhynchus* and Barnacle Geese *Branta leucopsis* and waders, while others, such as Northern Wheatears *Oenanthe oenanthe*, merely pass through. An illustration of the conditions experienced by geese moving south in autumn is shown in fig. 2, when a deep, slow-moving depression was centred over the English Channel on 30th September and 1st October 1998, with cloudy, wet easterly winds prevailing over most of Britain. A period of easterly winds had, however, also affected Iceland from 22nd September, lasting until 29th, when a small anticyclone built temporarily, backing the wind from a light northeasterly to northwesterly over the island. Birds took advantage of this tailwind, and encountered the easterly winds farther south during the next two days. This resulted in their arrival off the western fringes of Scotland, rather than the normal eastern and northern landfall, and a battle eastwards into the wind to reach land. Huge numbers of geese arrived in the Western Isles and on the western mainland of Scotland during this period (including 15,000 Pinkfeet at

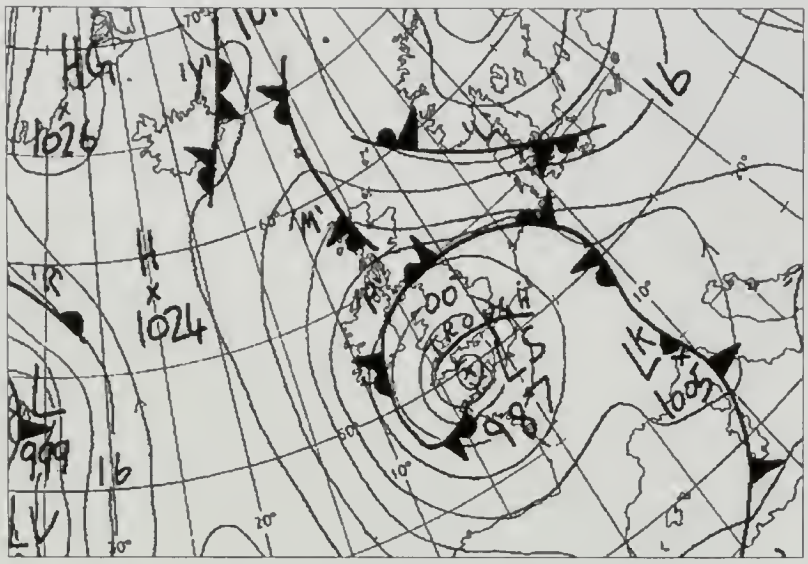


Fig. 2. Synoptic chart, 00.00 hrs, 1st October 1998.

Ardmore Point, Clyde, on the morning of 1st October), but stayed only briefly.

Trans-European migrants

Species departing from Scandinavia and northern Eurasia take a variety of headings. Many head west to winter in Britain and Ireland, including many waterfowl, Woodcocks *Scolopax rusticola* and thrushes (Turdidae). Relatively few of the longer-distance migrants from this source pass through in autumn, however, as their normal route takes them SSW across the North Sea or through Europe. Only when weather conditions are unfavourable do they appear in Britain. Although most species follow similar routes from year to year and spend the winter in the same region, ringing has shown that some individuals may winter in completely different areas in different years. For example, Snow Buntings *Plectrophenax nivalis* from Greenland may spend one winter in North America and the next in Europe, while some Redwings *Turdus iliacus* from Scandinavia alternate between wintering areas in Britain and the Black Sea region (Alerstam 1990). The trigger for this 'wandering' may be the prevalent wind direction at the start of their migration.

The same prolonged easterlies that deflected the Pink-footed Geese in 1998 (above) had been established over the UK since 23rd September. At times, the origin of this weather system extended east into western Russia, and brought considerable falls of scarcer passerine migrants. These included Shore Larks *Eremophila alpestris*, Bluethroats *Luscinia svecica*, Yellow-browed Warblers *Phylloscopus inornatus*, Red-breasted Flycatchers *Ficedula parva* and Great Grey Shrikes *Lanius excubitor* along the entire length of the North Sea coastline. Associated with these were several national rarities, including a spectacular run of at least 25 Rustic Buntings *Emberiza rustica* and no fewer than four Pallas's Grasshopper Warblers *Locustella certhiola* in the Northern Isles, establishing beyond doubt that this airstream was drawing in birds from central Siberia. Commoner inbound migrants arrived throughout eastern Britain during this period, some species in large numbers, including Robins *Erithacus rubecula*, Song Thrushes *T. philomelos*, Redwings, Blackcaps *Sylvia atricapilla*, Goldcrests *Regulus regulus* and Siskins *Carduelis spinus*.



David Tipling/Windrush

129. Shore Lark *Eremophila alpestris*, Holy Island, Northumberland, October 2004. Shore Larks were one of several scarce migrants which appeared in higher-than-usual numbers along North Sea coasts in September 1998 during a period of prolonged easterly winds.

Significant arrivals and major falls

Thrushes frequently arrive in huge numbers in October. After a week of strong southwesterly winds over southern Scandinavia in late October 1995, a brief ridge of high pressure moved north into the region and over the North Sea on 29th. Thus, an adverse weather situation changed suddenly into one in which enormous numbers of delayed migrants were able to depart, taking advantage of clearing skies and only light crosswinds over the northern North Sea. Redwing passage in northeast Scotland increased rapidly, reaching a peak on 30th with at least 125,000 arriving over Sutherland, 75,000 of these in one half-hour period around midday. Similarly, a strong WNW airstream in October 1986, following two weeks of adverse weather between Greenland and Britain, allowed the immediate and rapid passage of 'Greenland' Wheatears *O. o. leucorhoa* across the northeast Atlantic. A mass arrival of 10,000-20,000 Northern Wheatears on the Isle of Man resulted in the partial blocking of a road and the covering of adjacent fields (Thorpe & Spencer 1992).

Observations such as these, of enormous numbers of birds on passage, are uncommon, and occur only when migration is affected by adverse weather. One of the largest falls on record occurred on 3rd September 1965, and was centred along the coast of East Anglia, where an estimated half a million birds landed along a 40-km stretch of Suffolk coastline (Davis 1966). Fig. 3 shows the synoptic situation on 3rd September 1965, and conditions typical for a major fall. A depression over the Alps moved northwest towards Britain on 2nd, preceded by strong north or northeast winds with extensive cloud and rain from southern England to Denmark. A persistent ridge of high pressure lay over southern Norway and Sweden. By dawn on 3rd September, thick frontal cloud covered the southern North Sea and by 12.00 hrs was associated with a complex depression. Migrants leaving southern Scandinavia in good conditions were deflected to the west by the easterly winds, and encountered poor weather over the southern North Sea. Birds began arriving on the coast between Yorkshire and Norfolk, but it was farther south that the extraordinarily concentrated falls took place a little later. During the afternoon of the 3rd, changing wind directions over the East Anglian coast, accompanied by heavy rain, brought huge



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130. Common Redstart *Phoenicurus phoenicurus*, Norfolk, September 1995. In the extraordinary fall of migrants in East Anglia in early September 1965, Common Redstart was one of the most abundant species, with birds even landing on people in the street.

numbers of migrants tumbling from the sky. Migrants oriented to the SSW had encountered frontal cloud over the sea, with landfall for some dependent on the wind flow into which they penetrated. On arrival, many were exhausted and of low weight, with large numbers being washed up dead on the tideline. This disorientated flight in heavy rain and strong winds over the North Sea had clearly been extremely debilitating. The sheer magnitude of the fall was overwhelming. One experienced observer, walking a 4-km section of shore early on 4th September, estimated 15,000 Common Redstarts *Phoenicurus phoenicurus*, 8,000 Northern Wheatears, 4,000 Pied Flycatchers *F. hypoleuca*, 3,000 Garden Warblers *S. borin*, 1,500 Whinchats *Saxicola rubetra*, 1,500 Tree Pipits *Anthus trivialis*, 1,000 Willow Warblers *Phylloscopus trochilus* and 500 Common Whitethroats *Sylvia communis*. Common Red-

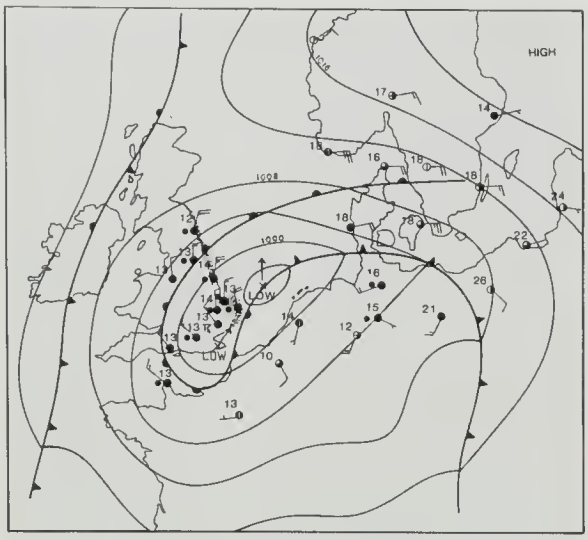


Fig. 3. Synoptic chart, 12.00 hrs, 3rd September 1965.

starts were so numerous that they descended from the skies into any available cover, and some were recorded as perching on the shoulders of town-dwellers. The fall was short-lived and, with breaking cloud and veering winds, the majority of these migrants had moved on within a few days.

Another amazing autumn event concerns the annual arrival of Goldcrests into Britain. These tiny birds often arrive in large numbers along the North Sea coast, during an incredible feat of migration from the Scandinavian forests, where a proportion of the population is resident. The migrants provide a stock that can boost the resident Scandinavian population after severe winters, while in mild seasons those that overwinter can breed earlier and generally more successfully than the returning migrants. In mid October 1982, a massive immigration took place along the Scottish coast south of Aberdeen, with more than 15,000 on the Isle of May, Fife, on 11th October. This was another classic fall situation, with an anticyclone over Scandinavia and western Russia, a fresh easterly airflow over the North Sea and a slow-moving occlusion extending from eastern Scotland to southern Sweden.

Islands, overshooting and reorientation

Although migrants often arrive along the entire length of the east coast, arrivals in the Northern Isles are seemingly larger and more exciting. This is probably a result of two factors. Firstly, migrants finding themselves in the gaps between the islands may tend to veer off track to head towards a visible piece of land, where they become more concentrated. During poor visibility and darkness, those birds in the gaps funnel through towards the open Atlantic. Many of these are believed to reorientate from a westerly track to a south or southeasterly track at dawn, when they become aware of nearby land. Secondly, winds with an easterly component on the north and east flanks of a depression, and the accompanying poor weather, are more frequent further north, by reason of the tracks the depressions take.

On 15th October 2001, a warm sector moved north across northeast Scotland, bringing southeast winds, rain and low cloud. Observers at sea close to Orkney watched many hundreds of thrushes, mostly Redwings and Fieldfares *T. pilaris*, and presumably of Scandinavian origin, flying low over the waves from the northwest and into the wind. These birds were thought to have overshot the islands during the night, and were reorientating at dawn when land became visible (Eric Meek pers. comm.; fig. 4).

Farther west, arrivals (albeit now reduced in size) of Eurasian passerines also occur along west coasts, again thought to be reoriented movements. Examples of these occurred in autumn 2003, when a scattering of Eurasian vagrants occurred throughout the Western Isles, and a few reached as far west as Co. Donegal.

Arrivals from Siberia

The appearance of vagrants from Siberia is an annual event in Britain, although numbers and variety fluctuate markedly from year to year and depend on the development of anticyclonic

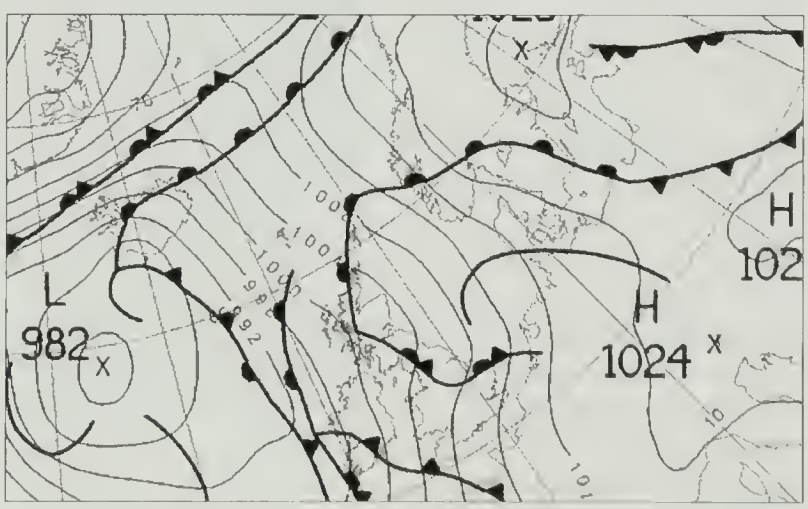


Fig. 4. Synoptic chart, 00.00 hrs, 15th October 2001.

conditions across Scandinavia and farther east, creating an easterly airflow across Europe. Classic anticyclonic conditions prevailed over northern Europe in September 2003, when pressure at least 4 hPa (1 hectoPascal = 1 millibar) higher than normal extended from Britain east into western Russia. Both September and October experienced periods of east and southeasterly winds (most prevalent in late September and mid October) and warm airflows (which often coincided with those dates and were additionally present in mid September). The incredible number and variety of rare migrants during these months and the relative paucity of accompanying commoner migrants suggests that the latter had little difficulty in maintaining their migration routes and tracks, while the former were probably non-oriented dispersing birds wandering well beyond their normal range. Many of the rarest species involved originated from no closer than northwest Russia and the Ural Mountains. During 5th-12th September, a persistent anticyclone extended across northern and eastern Europe north of 50°N. This maintained fine weather, which, combined with a southeasterly airflow across the Baltic Sea, gave the region its highest temperatures for the month. It also immediately preceded the beginning of an arrival of Yellow-browed Warblers, but it was not until the onset of slack winds and improving weather over the North Sea from 27th September that Asian vagrants began to arrive in force. Between 28th September and 1st October, rarities along the east coast included Red-flanked Bluetail *Tarsiger cyanurus*, White's Thrush *Zoothera dauma*, Pallas's Grasshopper Warbler, Lanceolated Warbler *Locustella lanceolata*, an eastern Savi's Warbler *L. luscinioides fusca* [still under consideration by BBRC] and Sykes's Warbler *Hippolais rama*, as well as the more regular species such as Olive-backed Pipit *Anthus hodgsoni*, Citrine Wagtail *Motacilla citreola*, Arctic Warbler *P. borealis* and another influx of Yellow-browed Warblers. This exceptional fall suggests an origin from the immediate near continent, consisting of birds that had previously trickled westwards during the earlier anticyclonic spell in September. The easterly airflow from Europe dissipated on 2nd October, with an occlusion bringing a strong west or northwest airflow over Britain during 3rd-10th, which lasted until mid month in northern Europe. The development of an anticyclone over the North Sea from 11th October (see fig. 5) produced a southeasterly airflow over Britain that backed to the northeast by 19th as the high pressure shifted east and decayed. Another influx of Asian vagrants began from 11th, comprising many Pallas's Leaf *P. proregulus*, Hume's *P. humei*, Radde's *P. schwarzi* and Dusky Warblers *P. fuscatus*, Taiga Flycatcher *Ficedula albicilla* [still under consideration], Pechora *A. gustavi* and Olive-backed Pipits, Red-flanked Bluetail, Siberian Rubythroat *Luscinia calliope* and White's Thrush. Other eastern vagrants recorded during September and October 2003 included Paddyfield Warbler *Acrocephalus agricola* and Isabelline Shrike *Lanius isabellinus*, both species with breeding ranges centred on Central Asia, suggesting that the origin of the birds involved extended across a wide latitudinal range. Mediterranean species such as Subalpine Warbler *S. cantillans*, Melodious Warbler *H. polyglotta* and Woodchat Shrike *L. senator* also appeared in Britain, illustrating the disparate origin of birds wandering across Europe during this period.

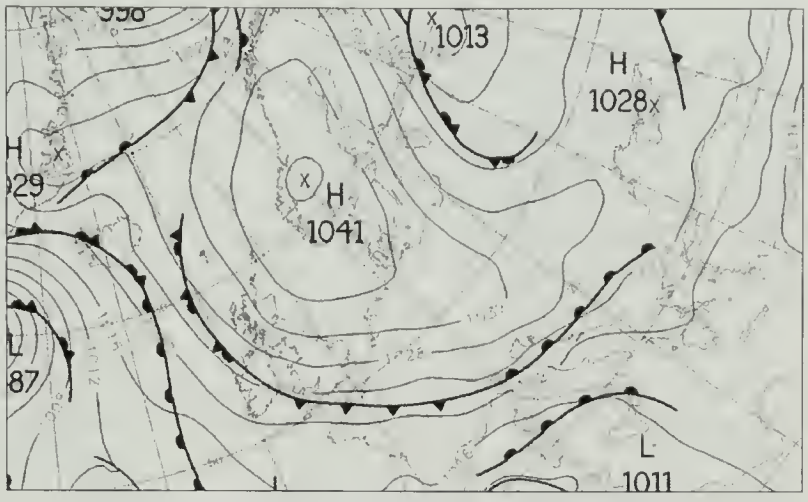


Fig. 5. Synoptic chart, 00.00 hrs, 15th October 2003.

Previously, the appearance of these primarily Asian breeding species that normally winter in southern and Southeast Asia has been correlated with the distribution and intensity of the semi-permanent winter high-pressure zone that begins to form over Siberia in early autumn. This anticyclone creates an extensive easterly flow on its southern flank that reaches west into the Black Sea region in October. However, most migrants depart from the source region in

August and September, well before this anticyclone is established. There remains considerable doubt over the role that weather plays in stimulating this migration, and also the numbers involved, although passage may initially be stimulated by fine weather and assisted by easterlies. The eventual westward movement across Russia and northern Europe depends on synoptic situations similar to those influencing European migrants. Reasons for the anomalous direction in which these migrants move are also difficult to determine. Several factors may be implicated, including habitat and population changes, magnetic anomalies in the source regions, reverse migration, straightforward disorientation and (possibly most likely) exploratory movements. In the latter, non-oriented migrants may disperse in all directions but only those following their habitat zone would survive. As habitat zones are more or less latitudinal, an approximate westward movement would result, having the appearance of reverse orientation.

North American landbirds

While northern Britain is better placed than the south to act as a landfall for drifted migrants crossing the North Sea in autumn, it is not so for vagrants from the opposite direction. The southwestern regions of Britain and Ireland are the classic landfall for North American landbirds caught up in fast-moving depressions that develop over their western Atlantic flyway in late autumn and cross the Atlantic rapidly. Since these features are typical of mid latitudes, areas farther north receive fewer transatlantic vagrants. Depressions affecting areas from Scotland northwards are more likely to have deepened over the mid Atlantic and slowed down. Unlike migrants in western Europe, neither North American transoceanic migrants nor eastern coastal migrants have the advantage of a landfall when drifted by westerlies. When these winds are strong, coastal birds are drifted out to sea and are able to return to the coast only with the expenditure of considerable energy. Many late-autumn migrants in North America cross the western Atlantic from Nova Scotia and northeastern USA to the West Indies and South America in a single flight. Small landbirds are unable to sustain this long passage unless assisted by a favourable northwesterly wind. Large numbers of migrants head southeast in the northwesterly winds, eventually overtaking the weakening cold front responsible for generating this wind flow. Some cold frontal zones retain their identity along the marked marine thermocline at the edge of the warm Gulf Stream and generate frontal waves. A frontal wave intensifies the associated cloud, precipitation and winds in the warm air, which may disorientate migrants enough to initiate drift eastwards towards the open ocean and a transatlantic crossing in strong, warm southwesterly winds (Elkins 1979).

Other vagrant landbirds are thought to encounter such frontal waves as reverse migrants heading northeast in warm airstreams from a southerly point. Unlike the northern species on southward migration over the sea, these have a more southern distribution and migrate rather earlier, including Red-eyed Vireo *Vireo olivaceus* (the most abundant of all North American landbirds reaching Britain and Ireland) and Baltimore Oriole *Icterus galbula*. This mechanism of transatlantic crossing is supported by events in 1995. The northern boundary of a tropical air mass over the eastern seaboard of the USA, due to Hurricane 'Opal' over the Gulf of Mexico, had already caused a significant fall of migrants in Bermuda, along with large movements of Monarch butterflies *Danaus plexippus* in late September. In

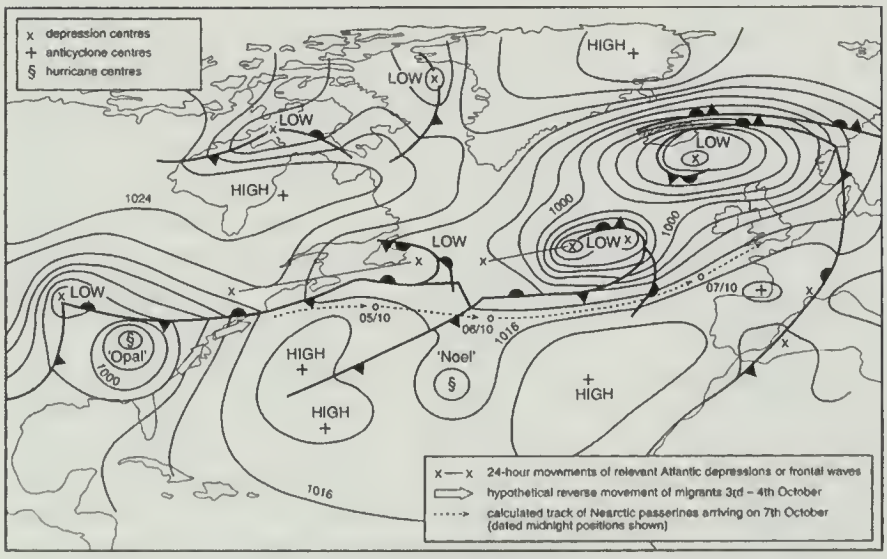


Fig. 6. Transatlantic vagrancy in October 1995, showing location of Hurricane 'Opal'.

the second week of October 1995, rapidly moving transatlantic frontal depressions brought at least 11 Red-eyed Vireos to Britain as well as other vagrant species and many Monarch butterflies (Elkins 1999; fig. 6).

One particular pressure pattern often erroneously associated with transatlantic migration is the tropical storm (or hurricane, as such storms are known in the North Atlantic). A hurricane is an extremely intense cyclonic storm, which differs from an intense depression in that it does not involve different air masses and therefore has no fronts (see Hurricane 'Opal' in fig. 6). Hurricanes rely on high sea temperatures to provide the moisture and energy to sustain them. They develop at low latitudes and move west, then northwest over the Caribbean Sea region. Some make landfall (as Hurricane 'Opal' did) but others will curve northeast to move along the USA's eastern seaboard. Some may drift out into the North Atlantic (see Hurricane 'Noel' in fig. 6) and cross autumn migrant routes. While there is no doubt that huge falls of migrants descend on coasts, islands and shipping during the passage of hurricanes, the storm itself moves relatively slowly with its violent winds circulating round the storm centre, often affecting a vast area. Any bird caught up in these winds would also circumnavigate the centre (if indeed it survives the turbulence and torrential precipitation) and finally succumb to exhaustion. The only link that transatlantic migrants may have to hurricanes is in the final stages when the storm evolves into a deep depression by engaging with cold air, which generates a frontal system. Even then, a wind flow capable of carrying a migrant rapidly across the North Atlantic would only develop ahead of the cold front, well away from the parent depression. Nevertheless, these deeper, more mature depressions are considered to be the probable mechanism for vagrancy from North America to Greenland and Iceland (Elkins 2004).

The locations of several birds recorded in autumn 2003 illustrate that not all American landbirds travel along a direct transatlantic route. For example, two *Catharus* thrushes were recorded in Shetland on 27th September 2003 at the start of the large Eurasian vagrant fall, while other Nearctic vagrants arrived in Scotland during October 2003, several during the

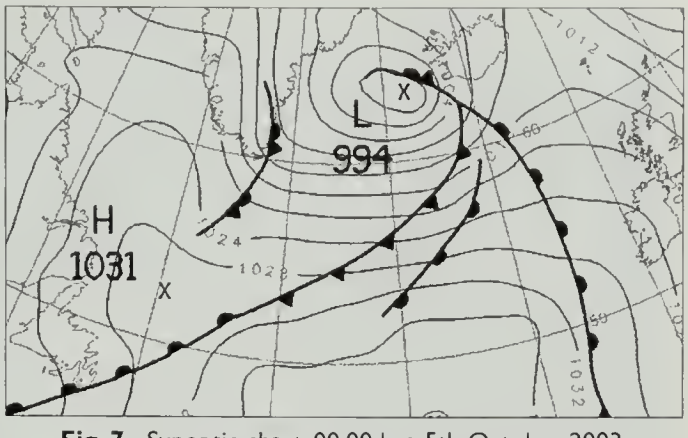


Fig. 7. Synoptic chart, 00:00 hrs, 5th October 2003.

second wave of eastern vagrants discussed above. With no obvious links to suitable transatlantic airflows, this illustrates how difficult it can be to correlate individual vagrants with weather patterns. The time and place of arrival, and how long they have remained undetected, are often unknown. Autumn 2003 saw at least seven North American passerines reaching Iceland, where individuals were recorded between 6th and 10th October, probably delivered by two active depressions that crossed the region on 4th-5th October (fig. 7) and on 8th-9th October. It is possible that Iceland was the provenance of the Red-eyed Vireo on the island of Barra, Western Isles, on 5th October, which, although travelling in the same air mass, may have 'missed' Iceland. The records of American passerines in Scotland later that month occurred during southeasterly winds and were possibly wandering individuals dispersing within Britain after having made landfall elsewhere (see fig. 5).

Other North American birds

North American waders cross the North Atlantic as frequently as landbirds, but there are subtle differences in the mechanics by which they do so. The chief distinction is the altitude and range of the two groups. Waders (even the smaller species) generally fly higher, faster and further, and are therefore often subject to different wind regimes. Most waders from Arctic North America migrate to South America. While it is true that weather conditions under which they depart are normally similar to those used by landbirds, by climbing to higher altitudes they reach wind systems whose strength and direction are at variance with the low-level winds influencing landbird migration. For example, the northwesterly post-cold-frontal airflow so necessary to small songbirds flying across the

extreme western Atlantic towards the West Indies rarely extends to wader migration altitudes during the early stages of the lives of the associated depressions. Indeed, winds back (i.e. change counter-clockwise) with height, so that above, say, 3 km altitude, these northwesterlies become westerly in direction and strengthen. Higher still, winds may be southwesterly and reach jet-stream velocities in excess of 30 m/s and frequently above 50 m/s. Consequently, North American wader arrivals in northwest Europe are thought not to be related to the rapid movement of developing depressions across the Atlantic. It is probable that their flight at higher altitude is influenced by the powerful southwest to westerly winds described above, and their wider geographical and temporal distribution in Britain and Ireland does suggest that waders arrive at a higher level, and with superior fuel reserves than the smaller songbirds, which appear chiefly in the southwest, and often in an exhausted state (Elkins 1988).

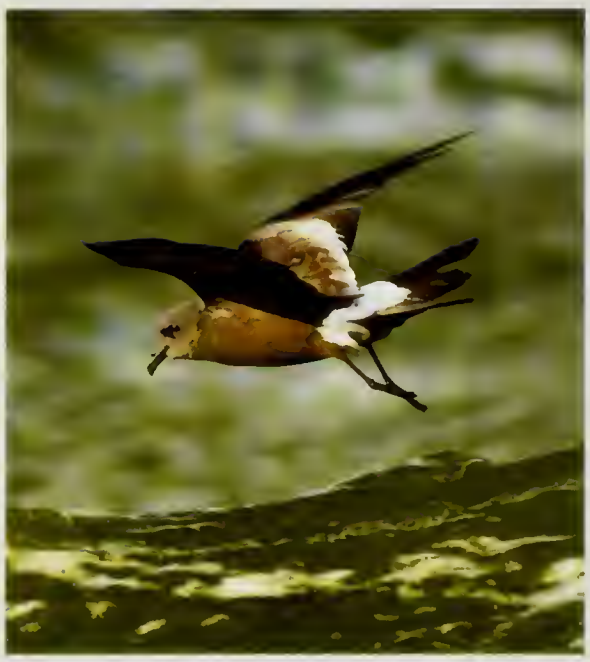
Seabirds

Seabird migration is rather less dependent on the weather than that of landbirds, and patterns of migration are more related to feeding opportunities and mode of flight. For example, terns (Sternidae) and Kittiwakes *Rissa tridactyla* tend to migrate in quiet, anticyclonic weather, while tubenoses need stronger winds to assist their mode of flight. Seabird movements are invariably observed only from the coast and many go undetected farther out to sea. Additionally, migration and feeding movements are often difficult to separate, especially for the more pelagic species such as Fulmars *Fulmarus glacialis* and shearwaters.

Of particular interest are those species that breed in the South Atlantic and spend the austral winter in the northern hemisphere, including Sooty Shearwater *Puffinus griseus*, Great Shearwater *P. gravis* and Wilson's Storm-petrel *Oceanites oceanicus*. The Sooty Shearwater is the most numerous of these species in British waters, occurring from midsummer onwards. From dates of observation, it seems that most birds arrive off western Ireland and Scotland in late July and August, with movements around the Northern Isles and into the North Sea chiefly during August and September. The largest coastal movements are associated with onshore winds, so those observed along the west coast occur in westerly winds, with large movements off the east coast being recorded mainly in periods with a strong easterly element to the wind, or during clearing weather in post-frontal north or northwesterly winds. The large movements (over 2,000 at some sites) along the east coast of Britain on 22nd September 2002 occurred in just such conditions. In the Northern Isles they occur



Steve Young/Birdwatch



Steve Young/Birdwatch

131 & 132. Intense Atlantic depressions in autumn occasionally bring small numbers of pelagic seabirds inland to reservoirs and other large waterbodies, notably Sabine's Gulls *Larus sabini* (left, Heysham, Lancashire, September 1988) and Leach's Storm-petrels *Oceanodroma leucorhoa* (right, Crosby, Merseyside, September 2004). Sabine's Gulls were particularly associated with a storm in 1987, which brought unprecedented numbers (300+) to southern and eastern England, while 2,000+ occurred in western France in September 1993, courtesy of the tail-end of Hurricane 'Floyd'.



Steve Young/Birdwatch

133. Waxwings *Bombycilla garrulus*, Liverpool, January 2005. Waxwings are perhaps the most familiar eruptive migrant to reach Britain and Ireland, and the irruption in winter 2004/05 has been one of the largest for many years. A combination of high population levels and low food supplies is responsible for triggering these irregular movements away from the breeding grounds, although weather conditions en route play a role in the birds' ultimate destination.

typically in wind directions anywhere between west and southeast, often in disturbed frontal weather. Most large passages of skuas (Stercorariidae), Manx Shearwaters *P. puffinus* and Fulmars are also associated with such winds.

Overland movements of seabirds, mainly involving terns, skuas and Kittiwakes, are not unusual. Flocks of these species have been observed passing west along the Forth-Clyde gap, southwest down the Great Glen and inland over northeast England. The weather during such movements suggests that they may be seeking lighter wind regimes as strong winds abate in the east, or using fine anticyclonic weather to navigate by sight from the east coast to the west. In the latter situation, winds often have a northeast (tailwind) component. Further afield, high-level overland skua passage is normal over both the Eurasian and the North American landmasses. Gulls regularly migrate overland, but autumn storms not infrequently bring small numbers of typically pelagic species to inland reservoirs and lakes in central England. Of particular note are species considered scarce even along the coast, such as Grey Phalarope *Phalaropus fulicarius* and Sabine's Gull *Larus sabini*.

In October 1987, an intense depression moved northeast across southern England, bringing with it unprecedented numbers of Sabine's Gulls and Grey Phalaropes (Elkins & Yésou 1998). Large numbers of both species feed in and migrate through the Bay of Biscay during autumn, and the timing and distribution of sightings following this storm suggested that many had drifted over the sea within the relatively calm eye of the storm. After making landfall in the early hours of the morning, settling out took place, during which the birds were overtaken by the hurricane-force southwesterly winds adjacent to the eye, and swept downwind. Their subsequent distribution across southern England corresponded almost exactly to the horizontal trajectory of the airflow. A similar landfall of Sabine's Gulls occurred in western France in September 1993, when the remnants of Hurricane 'Floyd' crossed the north of the country. Severe westerly gales drove many birds inland, where more than 2,000 Sabine's Gulls were reported. In both the 1987 and 1993 storms, the landfall of birds occurred at night when light levels were extremely low. A nocturnal landfall has also been attributed to the deep inland penetration of seabirds during hur-

ricanes along the eastern seaboard of the USA, and it appears that the birds may not be sufficiently aware of their position overland to attempt an immediate return to the sea (Curry 1996; Elkins & Yésou 1998).

Eruptions

Some species that would not normally be considered as migrants can, nevertheless, often move considerable distances and in large numbers. The trigger for such outward movements, or eruptions, is a combination of high population levels (following a successful breeding season) and a lack of available food. The majority of eruptive species feed on fruits or tree seeds, many of which are borne in an irregular cyclical pattern, with lean years interspersed by productive seasons. These cycles are, however, not normally synchronised across the vegetation zone. The distance birds will move from the breeding range (normally westwards from the forests of northern Eurasia, but keeping within the habitat zone) depends on their ability to find alternative food sources. Should these be unable to satisfy the erupting population, varying numbers will continue westwards, often coming under the influence of easterly winds that carry them towards Britain and Ireland. Those irruptive species reaching Britain regularly comprise well-known species such as Waxwing *Bombycilla garrulus* and crossbills *Loxia* sp., but also other species as diverse as Rough-legged Buzzard *Buteo lagopus* (dependent upon small-mammal population cycles), Great Spotted Woodpecker *Dendrocopos major*, Fieldfare, Coal Tit *Parus ater*, Eurasian Jay *Garrulus glandarius* and Bullfinch *Pyrrhula pyrrhula*. Irruptions by rarer species, such as the 1968 invasion by Nutcrackers *Nucifraga caryocatactes*, and the late-nineteenth-century appearances of Pallas's Sandgrouse *Syrrhaptes paradoxus* in large numbers, demonstrate that irruptive species can sometimes originate from areas as distant as Siberia and Central Asia.

Spring migration

Departure of winter visitors

Departing geese and swans are conspicuous, particularly northward-moving skeins of the former in April. While awaiting suitable weather conditions, feeding flocks often resort to newly growing vegetation that will allow them to reach peak body condition. A typical departure situation for geese and swans bound for Iceland requires anticyclonic conditions with light winds. Although weather conditions at the time



David Tipling/Windrush

134. Whooper Swans *Cygnus cygnus* in a blizzard, Northumberland, March 2005. Snow showers would not trouble this party of wintering birds unduly (unless conditions were severe enough to freeze large waterbodies), but encountering heavy rain or snow and unfavourable winds on migration between Britain and breeding grounds in Iceland may severely disrupt their passage, as described in the text.



David Tipling/Windrush

135. Common Cuckoo *Cuculus canorus*, Dungeness, Kent, April 2004. The arrival of spring migrants in good weather is almost always unseen and is often registered only when a familiar song is heard for the first time since the previous breeding season.

of departure may be eminently suitable, such weather can often be short-lived with an unforeseen deterioration changing an ideal migration situation into one that can be hazardous, particularly for landbirds over the sea. While this is a familiar scenario for autumn migrants over the North Sea, it also brings particular difficulties for northbound migrants returning to Iceland and Greenland in the spring. Those leaving north and west Scotland and encountering deteriorating weather over the sea have been recorded turning back to land to await an improvement (Williamson 1968). Unfortunately, this is often not an option. For example, in late March 1995, Whooper Swans left the Solway Firth in fine anticyclonic weather (Pennycuick *et al.* 1996). One bird was tracked by satellite moving northwest along the west coast of Scotland. Once over the ocean, this bird (doubtless with its companions) flew into a gale between the Faeroe Islands and Iceland and was forced off course, landing on the sea east of Iceland on 1st April. A trawler skipper near that location watched six swans skimming the waves in a snow storm and southwesterly gale. On the following day, an observer on the Iceland coast reported exhausted Whooper Swans lying on the beach. The tracked swan recommenced its migration as the gale abated, reorienting to reach southern Iceland on 2nd April.

Arrival of summer visitors and retromigration

Similarly, for migrants returning to their breeding grounds, there is often much to endure. Short-distance migrants can take advantage of local changes in weather that will allow them to establish territories rapidly, the earliest generally being more successful. Conversely, long-distance migrants cannot foresee conditions on their remote breeding grounds, and are subject to vagaries of weather when reaching more northern latitudes. If they arrive too early, food resources may be limited, but arrive too late and the best breeding territories will be occupied. Those crossing western Europe frequently experience rapid weather changes owing to North Atlantic depressions, and early migrants in particular may be delayed by adverse conditions. Away from the ocean seaboard, arrivals of spring migrants are generally more constant and, on the whole, later migrants are also more regular in their appearance. Inbound migrants in spring arrive rapidly and relatively unnoticed, with few pausing on the coast. For many, the urgency to reach the

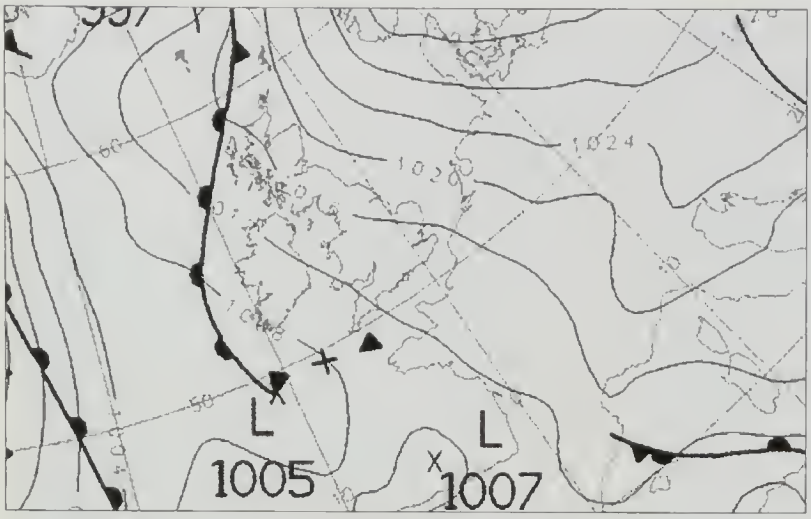


Fig. 8. Synoptic chart, 00.00 hrs, 15th April 2003. A typical warm, southeasterly airflow used by returning spring migrants.

breeding territories is paramount, and it is only when the first Willow Warbler or Common Cuckoo *Cuculus canorus* is heard singing that we realise spring has arrived (see fig. 8).

Just as some migrants appear to move in the 'wrong' direction in autumn, spring migrants may show similar behaviour, often known as 'retromigration'. In spring, such a reversed movement normally occurs in response to cold weather over the breeding grounds, and is more frequent in northern Europe. Here, unfavourable weather, such as cold winds, frost and snow, affects food supplies and encourages newly arrived migrants to return southwards to seek more reliable food sources. This can also be a problem to montane species, where breeding habitats are subject to later snowfalls than on lower ground. This 'retromigration' (and reverse altitudinal movement for montane species) has great survival value, and can occur in Britain during late-spring snowfall. Such behaviour is not always well documented, but poor conditions during the early breeding season may affect the breeding success of many species. Once nesting has begun, the shortage of food due to cold, wet or snowy weather can affect the survival of both adults and their young, although the consequences vary according to species. One example concerns the chilling of young birds, whether newly hatched (such as wader young) or older nestlings that are too large to be brooded successfully (such as raptor young). In both cases, thermoregulation has not developed sufficiently to maintain body temperature in wet weather.

Adverse weather conditions en route may cause delays and erratic arrivals of long-distance migrants in spring. This is especially noticeable when northbound trans-Saharan migrants encounter rain and strong winds across North Africa and the Iberian Peninsula. April is notorious for two events which can have a catastrophic impact on migrating birds. First, depressions crossing southwest Europe can produce snowfall over mountains and heavy rain over low ground. Second, the incidence of 'blocking' anticyclones west of Britain and Ireland is relatively high, introducing cold, northerly winds and delaying northward passage.

The difference in arrivals between years has been highlighted by the BTO Migration Watch/BirdTrack projects (www.birdtrack.net). Using Sand Martin *Riparia riparia* as a typical example, the number of records in spring 2002 showed a steady rise in March to reach a peak at the beginning of April, during a period of relatively favourable migration weather over the species' route. Reports dropped markedly in the second week of April as low pressure became established over southern Europe and cold east or northeast winds predominated over central and western Europe (fig. 9). Warmer south or southwest winds

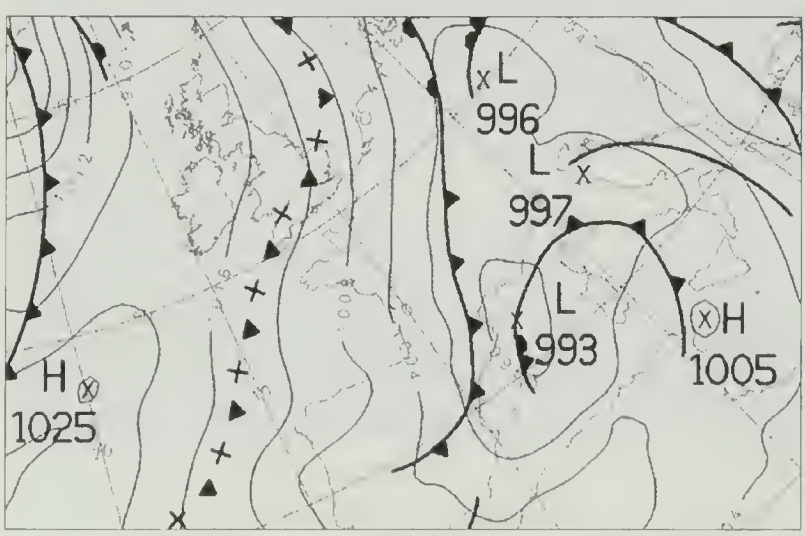


Fig. 9. Synoptic chart, 00.00 hrs, 13th April 2002.

returned on 21st, coinciding with another pulse of records. In spring 2003, sightings peaked in late March, after which a succession of fronts crossed western Europe, followed by cold north or northwest winds at the beginning of April. Sightings of Sand Martins dipped markedly until the second week of April, when warmer south or southeast winds ushered in another influx which peaked in mid month. Finally, records in spring 2004 peaked as early as mid March, with a subsequent decline owing to a spell of north or northeast winds over western Europe on 22nd-26th. A second, larger peak occurred in early April and coincided with warm south or southwest winds over Britain and France, followed by a further decline as fresh to strong cold north or northwest winds set in after 4th April.

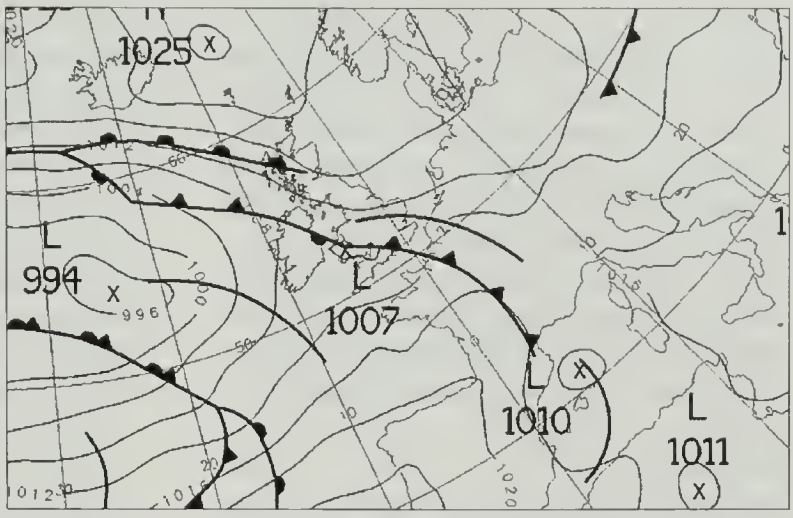


Fig. 10. Synoptic chart, 00.00 hrs, 18th May 2002, showing typical spring fall weather, with southeasterly winds over the North Sea and weak fronts moving north across Britain.

Conditions for spring falls

Even after arrival in the country, the movement of migrants northwards through Britain can be asymmetrical if easterly winds, cooled by a cold North Sea, steer birds up the milder western side of the country. For example, a substantial fall of inbound breeding species was recorded at Portland Bill, in Dorset, on 5th and 6th May 2000. Fronts moving slowly northwest across the English Channel in a fresh easterly wind clearly interrupted passage from France and Iberia, resulting in counts of, among others, 750 Common Swifts *Apus apus* and 500 Willow Warblers; 5,000 Barn Swallows and 1,500 House Martins were recorded the following day.

Easterly winds usually have a greater impact upon Scandinavian-bound migrants moving northeast across the North Sea, however, since poor weather and strong crosswinds can deflect them from their routes. One such fall occurred along the North Sea coast in May 1997. Over 90 Red-backed Shrikes *Lanius collurio* arrived from 16th May onwards in the Northern Isles, coinciding with an easterly wind flow that had moved slowly north up the east coast between 15th and 18th, finally becoming confined to northern Scotland and the Northern Isles on 19th-21st. A warm front embedded within this airflow also moved north and became stationary over northern Scotland by 18th. Other arrivals during this period comprised Bluethroats, Subalpine Warblers and Golden Orioles *Oriolus oriolus*, a significant influx of House Martins, Common Whitethroats and Spotted Flycatchers *Muscicapa striata* plus a late pulse of Barn Swallows. Fig. 10 illustrates the weather conditions associated with a typical spring fall situation.

Another major fall occurred in May 1993, towards the end of a period (during 4th-11th) of fresh east or northeast winds to the south of an anticyclone centred north of Scotland. The airflow was relatively cloud-free, but migrants were evidently influenced by the fresh winds over the North Sea. The main fall began on 10th with up to 100 Common Redstarts on the Isle of May and many elsewhere down the whole east coast. Also on the Isle of May were 15 Bluethroats on 11th with more in the next few days as a depression moved NNE across the country bringing heavy rain to the south. The fall included substantial numbers of Whinchats, Northern Wheatears, Lesser Whitethroats *Sylvia curruca*, Common Whitethroats, Willow Warblers and Pied Flycatchers with several Red-backed Shrikes, Tree Pipits and Wrynecks *Jynx torquilla*.

A west-coast event on 30th April 2001 highlighted what was probably a surge of spring migrants delayed by a run of westerlies and changeable weather over Britain and France. Light winds and clearing weather from northwest Spain to western and northern Britain over the night of 29th/30th April gave the impetus to northward-bound nocturnal migrants. On Bardsey Island, Caernarfonshire, 98 Grasshopper Warblers *Locustella naevia*, 85

Sedge Warblers *Acrocephalus schoenobaenus* and 465 Willow Warblers were recorded the next day, together with numerous other warbler species including a claimed Iberian Chiffchaff *Phylloscopus ibericus* (the latter, a non-singing bird, was not accepted by BBRC, but only after much deliberation: see *Brit. Birds* 97: 614). Nonetheless, the evidence suggests that the fall almost certainly involved oversea migrants that, having departed Spain at the first break in the weather on 29th April, made first landfall on Bardsey.

Overshooting

One aspect of migration peculiar to spring is the phenomenon of overshooting. This occurs when southern European species overfly their destination during unusually fine anticyclonic weather, particularly if temperatures are well above normal. These may also be exploratory movements that extend the birds' breeding range on occasion. Such birds often arrive with typical inbound migrants. In March 2003, 165 Black Redstarts *Phoenicurus ochruros*, normally a scarce breeding bird in southeast England, arrived in Scilly between 17th and 19th on a warm east or southeast wind flow associated with an anticyclone over the east coast of Britain, presumably having overshot their breeding ranges in Spain and France. However, many more Mediterranean species typically arrive during southeasterly winds with Scandinavian migrants (having perhaps originally overshot into central Europe). Although irruptive species are usually associated with autumn, a few appear in spring and summer, with two good examples being Common Quail *Coturnix coturnix* (from the south) and Rose-coloured Starling *Sturnus roseus* (from the southeast).



Robin Chittenden www.harlequinpictures.co.uk

136. Purple Heron *Ardea purpurea*, Lesvos, Greece, April 2001. In spring, some Mediterranean species, such as Purple Heron, may overfly their normal destination on the journey north from southern wintering grounds, the phenomenon known as 'overshooting'. For species such as this, weather conditions play an important part in determining the numbers which reach Britain annually.

Common Quails breed annually in Britain in small numbers, with occasional 'quail years' when exceptional numbers arrive. Summer 1989 was just such a quail year, perhaps the most notable on record, when an estimated 2,600 calling males were reported in Britain in May and June, of which no fewer than 750 reached Scotland (Murray 1991). The influx began in mid May, associated with an anticyclone across France and southern Britain producing warm southwest winds across the rest of Britain. This anticyclone moved northeast, with the warm airflow backing southeast by 20th May and lasting until 25th. Cold winds then intervened and new arrivals ceased, but this was followed by a more substantial influx after 10th June, when another surge of warm air moved across Britain. The reasons for such influxes are probably a combination of hot, dry weather and successful early breeding across their Mediterranean range, inducing many birds to disperse northwards and perhaps breed again.

A similar event in 2002 involved a large influx of Rose-coloured Starlings. This may have resulted partly from an increase in the breeding population during previous years, while enormous numbers were present on the steppes of southern Russia in spring 2002. These birds may have been stimulated by warm weather to overshoot the breeding grounds in southwest Asia and southeast Europe. In both May and June, mean temperatures over southeast Europe were 2-3°C above normal. An anticyclone built across Europe at the end of May, moving northeast into Scandinavia in early June and bringing winds with an easterly com-

ponent over central Europe and Britain. At first, parties were recorded in northern Italy and southern France but, with the changing weather pattern, the focus of the influx then moved north into Britain and northwest Europe, although southwest winds after 10th June suggested that later sightings were mainly of birds moving within the region. Birds reached as far west as Ireland, while the largest numbers in Scotland were in the northwest and the Western Isles, suggestive of continued onward movement through Scotland.

Seabirds

Seabird migration in spring can be notable, in particular the skua migration off the Western Isles, which usually occurs in fine weather with light winds. These birds do not stop to feed during what appears to be a non-stop passage direct to the breeding areas. The largest movements occur in the veering winds of post-frontal clearances or abating headwinds. In 1986, 766 Pomarine Skuas *Stercorarius pomarinus* flew north past Balranald, North Uist, in five hours on 21st May in the strong southwest winds behind an occlusion. During this period, 168 Long-tailed Skuas *S. longicaudus* also passed within the space of one hour (Davenport 1987). In May 1991, exceptional movements of Long-tailed Skuas were recorded at the same site (including 424 on 12th May), in poor weather associated with warm-sector south-westerly winds. In such conditions they often fly high and overland. Northward Pomarine Skua migration in spring off the west coast of Shetland occurs mainly after a long period of gales

137. Redwing *Turdus iliacus*, Kent, November 2002. Ice and snow cover are the enemies of many wintering birds, particularly open-ground feeders, and will often trigger 'cold-weather movements'. Plovers, Sky Larks *Alauda arvensis* and thrushes are often the most noticeable species on the move. The normal direction of hard-weather movements is south and west, and journeys are often of considerable length if the initiating conditions are widespread. Since 1988, there have been few winters with periods of prolonged severe snow or ice and, consequently, few significant hard-weather movements. Escape movements occur more often in continental climates normally subject to long periods of snow and ice. One Nearctic landbird appears extremely rarely in Britain in midwinter. A large, gregarious population of American Robins *Turdus migratorius* winters in southeast USA and any movement, such as might take place in cold weather, may risk a flight out to sea. From this region, where winter formation of depressions is high along the Gulf Stream boundary, transatlantic crossings in warm sectors may then be initiated (Elkins 1979). *David Tipling*/Windrush



from the west or northwest and is thought to involve birds that have been displaced from their route along the continental shelf to the west. By far the largest such movement was witnessed on 9th May 1992, when a staggering 2,093 birds were recorded heading north after seven days of southwest and westerly gales, while 748 were seen on 14th May 2003.

Summary

This review of the impact of weather on bird migration in Britain and Ireland illustrates the diversity of migrant species that fly across a region where meteorological changes can be frequent and rapid. Certain weather events produce unusual concentrations of migrants and also convey scarcer species from atypical source regions. Migration studies continue to raise awareness of the strategies that migrants use to overcome problems caused by weather. The knowledge gained will help any assessment of the effects that climate change will have on migration in the future.

Acknowledgments

All weather charts are derived from information kindly supplied by the Meteorological Office. I wish to thank Gunnlaugur Pétursson for preliminary data on Icelandic vagrants in 2003.

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Letters

Local bird surveys

After compiling a recent list of county and local bird reports (*Brit. Birds* 97: 76-91), I offered to produce a list of local ornithological surveys undertaken by public bodies or commercial institutions in 2003 and 2004. This was not intended to be a complete catalogue, but to provide a selection of titles which might be of interest to County Recorders or individual birdwatchers, and give some idea of the range of work that professional ecologists have in hand. Here, I am following the example set by the editors of *Irish Birds*; Ireland has the great advantage of having protection and research largely under one umbrella organisation (Birdwatch Ireland). Material of this kind is seldom 'published' – i.e. it is not offered for sale, but is circulated to interested parties. Spare copies are often left undistributed, however, and can usually be obtained on request, provided that they do not contain confidential material.

I have gained extensive experience in seeking out works of this nature (Ballance 2000, 2002), and realise the ease with which even major works can be missed by outsiders. Not everything is catalogued, or at least not immediately, and the best means of discovery is often by browsing the library shelves, and following up every reference found in bibliographies. Surveys commissioned by industrial or commercial bodies may be elusive, and can be labelled 'confidential' for no obvious reason. Often, these publications enter the public domain if they are used in connection with planning consents. A great deal of work is now being commissioned for windfarm applications, sometimes in areas where little has been previously published, but much remains unavailable. For instance, at the time of writing, there are 28 applications (from 16 applicants) outstanding in Aberdeenshire and Moray alone, all of which should contain bird surveys.

To locate many of these reports, I sent out a letter of enquiry to all regional branches of English Nature (EN) and RSPB, and followed this up by personal visits to Peterborough, Thetford, Sandy and the Alexander Library at Oxford. The list that follows is the result. I received a great deal of help from various contacts; nonetheless, over half my letters were not acknowledged within six weeks. EN local branches were particularly slow to respond, and I am at present still awaiting replies from seven. This response does not say much for the efficiency of one branch of the Civil Service, part of whose business it is, according to their 'Mission Statement', to provide information on research and conservation issues. One 'Casework and Enquiry Administrator' blandly informed me that she did not 'have the staff resources available to locate this information locally', but suggested that I was welcome to visit the office (some 200 miles distant) and do it myself.

This list contains one or two entries for surveys later summarised in county or local bird reports (and others may, in due course, become public in this way) but I have not included surveys which appeared *only* in such reports. I have provided only a selection of monitoring reports on long-term programmes, for example seabirds breeding or wintering on the northeast or Hebridean coasts. Sites such as Canna and St Abbs Head now have long series of such work. Indeed, so much surveying has taken place since about 1975 that most work is in some sense a monitoring exercise; the heady days of pioneering in the wilderness have long gone. The inclusion of a work in this list does not imply that access to it would be granted. Those that I have actually seen are marked with an asterisk (*). I have also included two reports which are already written and should have appeared prior to publication of this list.

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Appendix 1. Local ornithological surveys undertaken by public bodies or commercial institutions in the UK, in 2003 and 2004.

ENGLAND

Berkshire

Clark, J., & Eyre, J. 2003. *Thames Basin Heaths. Nightjar, Woodlark and Dartford Warbler. A monitoring.* 2Js Ecology for EN, Fleet. [Covers parts of Berkshire, Hampshire and Surrey.]

Cambridgeshire

Bennett, T. 2003. *Wilbraham Fen SSSI Breeding Bird Survey: a report.* EN, Orton Waterville.

Carter, N., & Glue, D. 2003. *Westfield Farm, Cambridgeshire (Plot 1572). The Countryside Restoration Trust. Report on breeding birds 2002.* BTO, Thetford.* [The site is at Comberton.]

Kirby, W., Bailey, C., & Boles, Y. 2003. *A Summary of Monitoring at Grange Farm, Knapwell 2002.* RSPB, Sandy.* [The latest report in a series on this RSPB farm.]

Cheshire

See *Derbyshire* for South Pennines (Peak District) survey.

Cornwall

Mucklow, C., Rylands, K., & St Pierre, P. In press. *Lizard Breeding Bird Survey 2003.* RSPB, Exeter.

Derbyshire

Carr, G. 2004. *Bird Survey of Forestry Commission Land, Westend, Derwent Valley.* EN, Bakewell.

— & Middleton, P. 2005. *2004 Breeding Bird Survey of the Peak District Moorlands.* Moors for the Future Partnership, Bakewell.

Devon

Booker, H. 2003. *Dartmoor Ring Ouzel Habitat Survey 2003.* RSPB, Exeter.

Evans, A. *et al.* 2004. *Comparative Quality of Winter Food Sources for Cirl Bunting Delivered Through Countryside Stewardship Special Project and CS Arable Options.* RSPB for Defra, London.

Jennings, S. 2003. *Culm Farmland Bird Survey 2002.* RSPB, Exeter.* [A survey of 27 tetrads in mid Devon.]

Jones, R. A. J. 2003. *Ring Ouzels Breeding Survey, Dartmoor Natural Area, 2003.* RSPB, Exeter.

— *Survey of Golden Plover and Dunlin Breeding on Dartmoor 2004.* Dartmoor Breeding Wader Recovery Project/Duchy of Cornwall, Princetown.

Taylor, T. 2003. *RSPB Aylesbeare Reserve Common Birds Census Spring/Summer 2003.* RSPB, Exeter.

See also *Somerset* for Exmoor surveys.

Dorset

Chown, D., & Cook, K. 2004. *Important Breeding Birds of Poole Harbour.* [Part 1: Water Rail. Part 2: Redshank.] Poole Harbour Study Group, Wareham.

Essex

Smart, J., Brooks, S., Pedder, J., & Deavin, H. 2003. *Breeding Redshanks on Essex Saltmarshes 1985-2003.* RSPB, Norwich.

See also *Suffolk* for Stour Estuary.

Gloucestershire

Cadbury, C. J., Proctor, I., & Phillips, J. 2003. *Selected Breeding Bird Survey at Nagshead RSPB Reserve, Forest of Dean, Gloucestershire, Spring 2003.* RSPB, Sandy.*

Wilson, A., & Smart, M. 2003. *Breeding Wader Populations in the Severn & Avon Vales Natural Area in 2002.* BTO for EA/EN, Thetford.* [Summarised by Smart in *Gloucestershire Bird Report 2002.*]

Greater Manchester

See *Derbyshire* for South Pennines (Peak District) survey.

Hampshire

Goater, R. D., & Haughton, D. 2004. *A Survey of Breeding Waders in the New Forest Mires, Hampshire.* RSPB, Brighton.

See also *Berkshire* and *Sussex.*

Lancashire

Wilson, P. 2003. *United Utilities plc Bowland Estate Survey 2003.* Slaidburn.

Shropshire

Upper Onny Wildlife Group. 2004. *Lapwing, Curlew and other Breeding Birds in the Upper Onny.* Rattlinghope.*

Somerset

Bridge, D. 2003. *RSPB Greylake Reserve Breeding Wader Survey April-June 2003.* RSPB, Curry Rivel.

Chown, D. 2003. *Night-time Use of the Somerset Levels and Moors Floodplain by Waterfowl: final report, winters 2001/02 and 2002/03.* EN, Taunton.* [The last of five reports on this subject, dating back to 1990.]

— 2004. *Porlock Marsh Bird Surveys. Final report, incorporating results of year five: November 2002 to October 2003.* Environment Agency, Bridgwater.* [The last in a series reporting on the effects of the 1996 breach in the shingle-ridge.]

Freshney, F. 2003. *Exmoor Ring Ouzel Survey 2003.* RSPB/Exmoor NP, Exeter & Dulverton.*

—, Booker, H., & Cox, A. *Exmoor Ring Ouzel Population and Habitat Survey 2003.* RSPB/Exmoor NP, Exeter & Dulverton.*

Staffordshire

Bennett, J. S., Welch, S., & Jennett, R. J. 2004. *The Breeding Birds of Cannock Chase in 2002.* West Midland Bird Club, Stafford.*

See *Derbyshire* for South Pennines (Peak District) survey.

Suffolk

Armitage, M. J. S., Austin, G., Ravenscroft, N., & Rehfisch, M. 2003. *Towards Determining the Causes of Declines in Waterbird Numbers on the Stour and Orwell Estuaries SPA.* BTO/Posford Haskoning Ltd., Thetford.*

Etheridge, P. 2003. *Dartford Warbler Recolonisation in Suffolk. Update – 2003.* RSPB, Norwich.* [The latest in a series of such reports which began in 1997.]

Wright, M. 2003. *Birds of Conservation Concern on Farmland in Coastal Suffolk.* EN, Ipswich.

Surrey
See *Berkshire.*

Sussex
Marsh, A. 2003. *The South Downs Winter Bird Survey: comparing the attractiveness of tier 4B stubbles, to farmland birds, with other types of management.* RSPB, Brighton.* [Covers six farms; two in East Sussex, three in West Sussex and one in Hampshire.]
Tinning, P. 2002. *South Downs Lapwing Project.* RSPB, Brighton.

Worcestershire
See *Gloucestershire* for wader survey.

Yorkshire
Armitage, B. 2003. *Marsden Moor National Trust Estate: Clough breeding bird survey June 2003.* Huddersfield Bird Club with NT/EN.* [Covers Denby Dale.]
Davies, K., & Sugrue, A. 2004. *South Pennines Twite Inventory 2003.* RSPB(NW)/NT, Huddersfield.
See *Derbyshire* for South Pennines (Peak District) survey.

WALES
East Glamorgan
Burton, N. H. K., Rehfisch, M. M., & Clark, N. A. 2003. *The Effect of the Cardiff Bay Barrage on Waterbird Populations. Final report.* BTO for Cardiff CC, Thetford.* [The last in a series on this development.]

Radnor
Callaghan, D. A., Derbyshire, P., Glazebrook, J., Kirby, J., & West, R. 2004. *Baseline Monitoring of Upland Breeding Birds in the Elenydd-Mallaen Special Protection Area, Wales.* CCW, Llandrindod Wells.
Jennings, P. 2003. *Survey of Common Sandpiper in the Elan Valley 2003.* CCW/Welsh Water, Llandrindod Wells.

SCOTLAND
Highland and Moray & Nairn
Butterfield, D. 2003. *Moray Firth Monitoring Winter 2002/03.* RSPB & Talisman Energy, Inverness.*†
— 2004. *Black-throated Diver Monitoring in North Scotland.* RSPB, Inverness.*
— 2004. *Moray Firth Monitoring Summer 2003.* RSPB, Inverness.*†
— & Devonport, P. 2003. *A Survey of Black-throated and Red-throated Divers on Loch Shin and Nearby Lochs. Summer 2003.* RSPB & Shin Smolts Ltd., Inverness.*
G-Copestake, P. 2003. *The Birds of Isle Martin. A summary of records from 1981 to 1993, survey results for 2002 and proposals for future survey work.* Isle Martin Trust, Ullapool.*
Kalejta-Summers, B. 2004. *Moray Firth Monitoring Winter 2003/04.* RSPB & Talisman Energy, Inverness.*†
Mitchell, C., Moore, P., Donald, C., Pierce, D., & Wilkinson, G. 2003. *RSPB Insh Marshes Bird Report 2000-2002.* RSPB, Insh.*
[† Part of a series dating back to 1977/78, covering the Firth from Buckie to Helmsdale.]

Outer Hebrides
Evans, G., & Allan, D. 2003. *Tern and Gull Survey 2003 of the Outer Hebrides in Relation to the Mink Control Programme.* RSPB, SNH & EU Life, Inverness.* [Part of a regular programme on this issue.]

Stirlingshire (Forth Area)
Calladine, J. 2003. *Baseline Bird Survey of Milton Glen, Stirling, 2003.* BTO Scotland for Woodland Trust, Stirling. [Site is near Callander.]

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An 'incursion of Alpine Swifts' – another historical record from Kent

Both during and after my reassessment of the 1915 Kingsdown Alpine Swift *Apus melba* record (now rejected; *Brit. Birds* 94: 332), I was often asked why I did not extend my review to another multiple occurrence in Kent – the Hythe record of 1916. As part of the consideration of old records necessitated by work for the latest Kent avifauna (Henderson, Hodge & Taylor in prep., *The Birds of Kent*), I once again had recourse to explain why I believe that the Hythe record should still be regarded as acceptable.

In *Birds of Kent* (1953), Harrison considered the Hythe record and the Kingsdown records as 'remarkable in that they refer to the species in numbers'. He could equally have considered them remarkable for the behaviour exhibited in both cases. The Kingsdown birds settled in a stubble field, whilst the Hythe birds entered a building and landed against the windows. In the former case, the highly improbable behaviour deems the record unacceptable; in the latter case, the remarkable but entirely plausible behaviour deems the record worthy of great

interest and closer scrutiny.

The Hythe record was sent to *British Birds* not by the finders of the Alpine Swifts but by H. M. Wallis who in writing a short note – *Alpine Swifts in Kent* (*Brit. Birds* 19: 132) – described how he 'came upon a record of an incursion of Alpine Swifts (*Apus m. melba*) during May, 1916'. The incident was described to him by Miss Margaret Barclay, of Hanworth Hall, Norfolk, who during the First World War had been nursing at Hythe 'and lodged in a lofty house, the end of a row, overlooking the town and Channel'.

> 'One evening in May, 1916, Miss Barclay on reaching her room heard a sound of scraping and fluttering against the glass of her open window, and found three very large brown Swifts with white undersides flattened against the lowest pane of glass. She gave them their liberty, noticing their 'hugeness', their white undersurfaces, how bulky they seemed in the hand and when they flew their wide spread of wing. Her fellow-lodger, Mr Hake, found six of the same sort of bird in his room the same night.'

Wallis notes that 'in the hall at Hanworth is a well-stuffed Alpine Swift (history unknown)' and that 'Miss Barclay was unaware of the value of her record at the time' until 'on her return home from nursing she recognises that the birds that had invaded her room at Hythe (Kent) were exactly like her father's Alpine Swift'.

Wallis may well have been aware that this sounded like a bizarre coincidence, and made efforts to authenticate Margaret Barclay's story. He explained that 'at my request the lady has written to Mr Hake, who endorses her story, adding very little except that he remembers their size and brown backs and white underparts'. The story about the stuffed *A. melba* may sound somewhat suspect, but collections of birds were much commoner in the early part of the twentieth century. Wallis, our man on the ground at the time, was certainly willing to accept it after his investigation. So, does the behaviour described call out for reassessment?

Alpine Swifts may not be as dependent on human habitation as Common *A. apus*, Pallid *A. pallidus* or Little Swifts *A. affinis*, but they certainly can show close association with human habitation. In Croatia, in 2002, I watched Alpine Swifts sitting (indeed mating) alongside windows, and others entering eaves and gaps in walls in a busy street. During cold weather, Alpine Swifts will cluster on suitable structures, including those made by humans. Liley & Watson (*Brit. Birds* 90: 148) recorded such a gathering in the city of Fès, Morocco. One of two Alpine Swifts at Reculver, Kent, in 1993, tried to enter a tower, hitting the window.

One last example that shows that the behaviour observed by Barclay and Hake is not unprecedented among swifts comes, fittingly, from east Kent. It is related to us in the charming *British Birds in their Haunts* by Rev. C. A. Johns (1909), quoting Mr F. Smith (*Zoologist* 1856, p. 5249). On a 'disagreeably cold' 8th July 1856, at Deal, Common Swifts arrived en masse; 'they flew unsteadily, fluttered against the walls of the houses, and some even flew into open windows'.

Different standards were applied before the days of BBRC and many 'old' records do not stand up well to close scrutiny. We must, however, be careful to wield the knife only in cases where there is overwhelming doubt. In this case, we have adequate descriptions, corroboration and plausible behaviour.

Acknowledgment

I would like to thank Dr Jo Cooper for facilitating access to Wallis's *BB* note.

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'North American' Peregrine Falcons in Britain

Two considerations now need to be borne in mind concerning the possible transatlantic dispersal of Peregrine Falcons *Falco peregrinus* discussed by Peter Robinson (*Brit. Birds* 97: 478-479). In the first place, these birds are hardly helpless refugees on ships, but regularly use them as convenient vantage points from which to catch prey, sometimes for thousands of miles. For example, when sailing west at 35°N in the North Pacific, WFC had a dark bird, possibly of the Aleutian race *F. p. pealei*, which migrates south on both sides of the Pacific, come on board at 166.6°E on 14th October 1966; it stayed for some 1,000 km to

148.8°W, about 500 km off Japan, three days later. On one occasion, it flew off fairly low over the sea in a straight line for over 2 km, chased something, and returned with a Leach's Storm-petrel *Oceanodroma leucorhoa*. It appeared from the remains that the falcon eventually caught at least four Leach's, although the petrels were not otherwise seen throughout the voyage. Another Peregrine accompanied his ship to South Georgia, where it was the first recorded (*Bull. B.O.C.* 116: 94). In fact, there are no fewer than 71 records of Peregrines seen by members of the Royal Naval Birdwatching Society listed in the index to the first 30 years of *Sea Swallow*. Secondly, much of the North American Peregrine population was wiped out by toxic chemicals in the past; it was then reintroduced, which may have affected its subsequent character and behaviour.

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Siberian Pectoral Sandpipers seen migrating towards the southwest

In their recent paper, Alex Lees and James Gilroy speculated that many of the Pectoral Sandpipers *Calidris melanotos* occurring in northwest Europe are not misplaced Nearctic vagrants but may instead be birds of Siberian origin on regular migration from the westernmost parts of their breeding range towards wintering grounds in (for example) West Africa (*Brit. Birds* 97: 638-646). Consequently, the following may be of some relevance.

We now know that the Pectoral Sandpiper breeds west to at least the Yamal Peninsula, and that it is rather commonly encountered in the western parts of the Taimyr Peninsula (e.g. through Helena Rogacheva's book, *The Birds of Central Siberia*, Husum, Germany, 1992). As a result of observations in 1998, 1999 and 2002, I can confirm that it occurs on western parts of the Taimyr, well to the west of the SE/SW migrational divide for waders. I encountered breeding Pectoral Sandpipers (warning adults and flightless young) almost up to 75°30'N, and west to the Kara Sea.

Of special interest for the discussion of the origin of Pectoral Sandpipers encountered in northwest Europe are, however, some observations made on the western Taimyr in early August 2002, around a campsite on the lower Gusinaya River, about 10 km from the Kara Sea coast (75°01'N 88°10'E). This area abounds in waders, geese and ducks and at least 75 Pectoral Sandpipers were seen on 8th August, including adults and both flying and flightless juveniles. During 6th-11th August, several mixed wader flocks, composed of Dunlins *C. alpina*, Curlew Sandpipers *C. ferruginea*, Red Knots *C. canutus*, Little Stints *C. minuta* and Ruffs *Philomachus pugnax*, and containing 1-3 Pectoral Sandpipers, were seen migrating southwest – as were two flocks composed solely of Pectoral Sandpipers, numbering eight and ten birds.

I cannot but agree with Lees & Gilroy in that it seems most economic for the westernmost populations of the otherwise largely Nearctic Pectoral Sandpiper to join the other waders on western Taimyr, and on the Gydan and Yamal Peninsulas, and go west. Much like the westernmost populations of Steller's Eider *Polysticta stelleri*, from roughly the same area, do – although they winter much farther north, in northern Norway and the Baltic Sea.

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The British Birdwatching Fair 2005

I refer to the item 'Controversial choice for Birdfair 2005' reported in 'News and comment' recently (*Brit. Birds* 98: 164). When I first heard of the chosen project, I must admit that I took a mental step backwards to consider whether this was a wise choice, at least from a political and public relations stance. I have since thought about it a great deal.

I suppose that the business of nature conservation and politics has some similarities to those difficult situations we have seen in recent years concerning sport. It is relatively simple to put up strong arguments for and against without really coming to an ideal solution. I asked myself what is at stake here. Well, clearly the future of some pretty substantial and declining habitat and, in Gurney's Pitta *Pitta gurneyi*, one hell of a fantastic bird. I have never seen the latter and would like to think that there is still a chance that I will.

My conclusion is that if we do go ahead and support the efforts of BirdLife International in the difficult but achievable task of persuading those in power in Myanmar to safeguard their forests, we not only open a dialogue in a difficult area but also give hope to those in the NGO BANCA that they are not alone. I know from being involved in conservation projects overseas how important it is to liaise with local activists and to encourage them, often in situations when the natural world has virtually zero priority in their countries. Remember that the conservation movement was too late to save the lowland forests of southern Thailand, where only tiny patches of lowland forest remain.

I guess that previous projects supported by the British Birdwatching Fair in countries considered to have less than democratic governments have not raised that many eyebrows. The situation in Cuba is extremely well known, yet much has been done in that country and relations between the Birdfair and those in conservation there are good and ongoing. Indeed, one of the co-organisers of the fair even married a lady from Cuba. Consider the Halmahera reserve, which has just been declared, ten years after the Birdfair first took up the challenge with the then disreputable government of Indonesia. Governments come and go, but once habitats and species are lost then it is frequently forever.

The world is perhaps more on edge than ever before and we now know that completely ignoring nations or taking direct action is not a solution to improving things. Keeping up some sort of dialogue has proved fruitful even with some of the more unpalatable regimes. No-one would argue that we should wait for regime change to deal with humanitarian issues such as AIDS or malaria, so why cannot we attach the same principles to major environmental concerns?

Although it is a difficult choice, I am therefore convinced that the chosen project is acceptable, and I will make my usual efforts in doing my bit to support the fair. I hope that others will turn up in their usual hordes, and that we can once again make an important contribution towards places, birds and people, wherever they may be. If we succeed, I might yet get to see a Gurney's Pitta.

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Acknowledging records

I was delighted to learn from P. J. Oliver's letter (*Brit. Birds* 98: 211) that I was not the only one who was disenchanted by the lack of response following the submission of records to bird recorders.

As co-ordinator for the current Norfolk Bird Atlas and a regular nature columnist in the *Eastern Daily Press*, I receive many letters and e-mails from fieldworkers and readers respectively. Almost invariably, everybody receives the courtesy of a reply, and I believe that this is one reason why the Atlas project has been such a success. Communication is vital in ensuring that long-term projects, such as county Atlases, are completed, and to this end our Annual Newsletters also make a significant contribution. Almost 300 observers have taken part in the Norfolk Bird Atlas, many of whom have been submitting annual records since we first started the project six years ago.

My policy with regard to e-mails is simple. I only reply to those people who have replied to, or at least acknowledged, any of mine.

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Notes

All Notes submitted to *British Birds* are subject to independent review, either by the Notes Panel or by the *BB* Editorial Board. Those considered appropriate for *BB* will be published either here or on our website (www.britishbirds.co.uk) subject to the availability of space.

King of the castle: play-like behaviour in juvenile Common Coots

While play behaviours have been commonly observed in many higher mammals (such as the primates and rodents), there are few documented instances of such behaviour in birds. Nonetheless, I have watched family groups of up to five juvenile Common Coots *Fulica atra* on two separate occasions in the canals of Holland and Wales indulging in activities that can at least be described as 'play-like'. On both occasions, the Coots in question (aged 30-50 days, based on size and moult characteristics) were initially attracted to flotsam within their respective parents' territories. This flotsam comprised substantial blocks of polystyrene, large enough for only one bird to alight on. Individuals appeared to deliberately upset these 'floating islands' when one of their siblings gained possession of it. The attacker would immediately climb onto the polystyrene and attempt (usually unsuccessfully) to fend off their siblings and so prevent them from gaining access to it. Such behaviour recalled the childhood game 'king of the castle' and continued for up to 15 minutes until all of the group were moved off by their parents or disturbed by passing boats. I would be extremely interested to hear of any other accounts of other play-like behaviours observed in birds.

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Feeding rates of Avocet chicks

On 12th June 1998 and 11th June 2004, I watched recently hatched Avocet *Recurvirostra avosetta* chicks on a pool at Elmley RSPB reserve, Kent, and was immediately impressed by their constantly high and almost frenzied feeding rates. I have been unable to find published reference to this topic and, as the rates recorded were extremely high, it seems worth putting them on record.

Both broods were composed of two chicks, downy and less than a quarter grown, with their bills only slightly curved. All four chicks fed almost continuously throughout the periods of observation (over an hour on each occasion). Through 10× binoculars, at ranges down to less than 10 m, I could clearly see swallowing motions after a chick swept its bill through shallow water and captured prey, invariably from beneath the surface. Prey items could often be seen in the chick's bill, but were too small to identify. In counts involving both chicks in each brood, and totalling 7 minutes 56 seconds in 1998 and 4 minutes 35 seconds in 2004, the number of items swallowed averaged 55 and 89 per minute respectively, an average of over 4,300 items per hour per chick. Assuming that they would feed for most daylight hours, at least in suitable weather, a chick would easily account for 50,000 prey items per day at this rate. I did not quantify success rates, but prey was caught after almost every sweep of the bill and the success rate could not have been far short of 100%.

Paul Collin (in Oliver 1991, *Bird Watching on the North Kent Marshes*) found that the flooded areas of Elmley contain a 'rich soup of aquatic algae and invertebrates', and that invertebrates reach a peak in early June and consist mainly of water fleas *Daphnia*. These are reported as food items of Avocets in *BWP* and seem likely to have been the prey consumed during my observations. Apart from a downy Common Redshank *Tringa totanus* chick feeding on the same pool as the Avocets in 1998, which consumed eight items, all taken from the surface, in 12 seconds, I have not observed or found reference to feeding rates of other wader chicks, but those reported here are clearly far in excess of those for species such as Northern Lapwing *Vanellus vanellus* and Ringed Plover *Charadrius hiaticula* that forage on damp or dry land. The manner of feeding observed at Elmley differed from that

reported in *BWP*, where it is stated that chicks up to half-grown rarely feed by sweeping the bill and feed almost entirely by picking, which implies taking food from the surface.

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Hirundine cold-weather behaviour

In late February 2004, a trickle of hirundines began moving north through Mallorca. Their migration was arrested when strong northerly winds caused temperatures to plummet, with snow and hail squalls across the island. Many of these early migrants were 'locked in' and, with food supplies drastically reduced, they spent much of each day huddled on perches least exposed to the biting wind. On 2nd March, when passing the island's power station, situated close to the reedbeds of S'Albufera Natural Parc, I saw a mixed flock of several hundred hirundines, mainly Crag Martins *Ptyonoprogne rupestris* and House Martins *Delichon urbicum* but with a scattering of Barn Swallows *Hirundo rustica* and Red-rumped Swallows *H. daurica*, gathered in unusual fashion on ledges which run the length of one of the power-station buildings.

This particular building is a favoured day roost site for overwintering Crag Martins, probably because of its south-facing aspect, combined with the heat generated within the building and the close proximity of insect-rich reedbeds. On this occasion, the 700 or so hirundines, which had earlier been foraging over S'Albufera, had retreated as a particularly fierce hail squall moved through. They spread themselves along the ledges, lying one atop the other in layers up to three birds deep, those on top attempting to burrow down into the tightly packed throng. They remained thus for several minutes until the squall had passed, despite there being adequate ledge space to perch normally.

This behaviour seemed to be a spontaneous reflex action by all four species involved, presumably to maximise the retention of body warmth among the flock whose fat reserves were probably pitifully low as a result of the lengthy cold snap they had endured.

Arthur Stagg

Repeated singing by Wren as a reaction to an emerging Adder

At about 12.00 hrs on 6th May 2004, at a conifer plantation near Dunster, Somerset, I watched a mature Adder *Vipera berus* (black form) emerge slowly from beneath a Gorse *Ulex europaeus* bush during a brief sunny spell. The Adder started to bask on a grassy patch and, quickly, a Wren *Troglodytes troglodytes* flew to perch on a nearby conifer branch and began to sing vigorously. This continued for some two minutes before the bird flew off; no alarm calls were heard. About an hour later, I saw another black-form Adder emerge to sun itself from beneath dense Gorse at a different site; again, a Wren flew to perch above the viper and began to sing vigorously. It seemed clear that, on both occasions, the song reaction was initiated by the Adder (which is, of course, a ground predator). On neither occasion was the Wren singing at these sites before the Adder emerged.

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Feeding of bilberries to Common Redstart nestlings: an emergency strategy?

As part of our studies of the ecology of Common Redstart *Phoenicurus phoenicurus*, we collected nestling faecal sacs and observed the feeding behaviour of parents of broods at different ages before fledging. The study population, in east Bohemia, Czech Republic, breeds in nestboxes in managed pine *Pinus* forest, without a shrub layer but with a cover of Bilberry *Vaccinium myrtillus*. On 3rd July 2001, we checked a brood of six 4-day-old chicks and collected two faecal sacs; both parents were seen in the vicinity of the nest. On 7th July, the absence of the male in the breeding territory was noted, and on 9th July five 10-day-old chicks and one dead chick were found in the nest and were being cared for by the female alone. Four faecal sacs were collected on 9th, and two more on 11th. The samples from 10- and 12-day-old chicks differed from those collected when the chicks were younger by their dark purple colour, caused by Bilberry fruits in the diet, and this was confirmed by analysis of indigestible food remnants (see table 1).

The most frequent prey items fed to chicks in the study area were spiders (Araneae) and larvae of Hymenoptera and Lepidoptera. Bilberries were not recorded in any other diet samples (n=267) collected in the study area, even though Bilberry is abundant here, and we believe that this is the first record of them being taken by Common Redstart. Although there are many records of other fruits and seeds in the diet of adults, observations of plant material being fed to chicks are extremely rare (Menzel 1984; Glutz von Blotzheim & Bauer 1988; *BWP*). Buxton (1950) observed chicks being fed on white currants *Ribes rubrum* agg. in one nest and there are two other records of redcurrants being fed to nestlings (Schuster 1930; Doerbeck 1966).

Fruits and seeds are typically eaten by insectivorous birds before and during migration as they are easy sources of food rich in carbohydrates and fats, are easily metabolised, and may even be preferred to items with high protein content (Bairlein 1990). Nicolai (1992) observed adult Black Redstarts *P. ochruros* taking elderberries *Sambucus nigra* when nestlings were being fed, chiefly early and late in the day, and probably as an easy substitute food when invertebrate prey was difficult to find, but the elderberries were generally not fed to chicks in the nest. Plant food is probably inadequate for chicks, which need high-protein food items for their development. Berthold (1976) showed that adult Robins *Erithacus rubecula* fed exclusively on fruits lost weight and died, and that it was necessary to maintain some animal food in the diet to ensure survival.

In the case described above, feeding bilberries to Common Redstart chicks might be a result of switching to an alternative food source in an emergency situation. After the loss of the male, the female was probably unable to provide enough living prey for the whole brood, as the one dead chick on 9th July suggests, and consequently brought easily accessible, yet suboptimal food to her chicks.

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Table 1. Contents of determinable prey items found in faecal sacs from nestlings of a Common Redstart *Phoenicurus phoenicurus* brood, Czech Republic, July 2001. The numbers of spiders and insects were estimated by counting hard exosceletal parts. On average, 50 seeds would be found in one Bilberry *Vaccinium myrtillus* fruit.

Chick age (days)	4	4	10	10	10	10	12	12
Size of faecal sac (mm)	10-15	5-10	25-30	20-25	20-25	10-15	15-20	15-20
No. Bilberry seeds	0	0	47	8	19	31	13	21
Spiders (Araneae)	3	1	3	2	1	1	0	0
Beetles (Coleoptera)	0	0	1	1	1	1	1	1
Hymenoptera	1	1	2	0	1	1	0	1

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Blackbird defending food source with a leaf

On 18th January 2004, I watched Blackbirds *Turdus merula* feeding in my garden in South Yorkshire. I had put out some bulgur (cracked wheat) for the birds to feed on, but it appeared that only Blackbirds were exploiting it. One male Blackbird defended this food source extremely aggressively, and in doing so would pick up a large dead leaf in his bill and chase off the other Blackbirds. This behaviour continued intermittently for more than an hour. A likely explanation for this behaviour is perhaps that the bird used the leaf in an attempt to appear larger and more aggressive. Similar behaviour has been recorded before in territorial situations (*BWP*), but this case is interesting in that it was over food.

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Garden Warblers: autumn moulting in the UK and birds with extra rectrices

During late summer 2004, Rye Meads Ringing Group (RMRG, based in the Lee Valley, Hertfordshire) recorded two instances of wing moult in adult Garden Warblers *Sylvia borin*. On 2nd August, an adult Garden Warbler was caught with an apparently moulting tail, but with all the feathers at approximately the same stage of growth, it was assumed that the bird had lost its tail (perhaps to a predator) and was regrowing it. Later the same morning, a second adult was trapped, and was also found to be moulting its tail. On this bird, the individual rectrices were at different growth stages and were, in fact, being moulted as if in a standard moult. On closer examination, both wings were also in the early stages of moult: the two outermost primaries were still growing, the inner primaries and secondaries were old, and two of the tertials had been replaced. The moult score was as follows: tertials 303; secondaries 000000; primaries 0000000043 (note that 0 indicates an old feather, 3 indicates a new feather between one- and two-thirds grown, and 4 indicates a new feather more than two-thirds grown). This pattern was symmetrical on both wings. On 14th August, another adult Garden Warbler was caught in primary moult, although on this occasion full moult details were not recorded. This is the first time in 25 years of ringing in the UK that RMRG has encountered



Dawn Balmer

138. Adult Garden Warbler *Sylvia borin* with 14 rectrices rather than the usual 12 (see text), Thetford, Norfolk, August 2004.

Garden Warblers in full moult. None of these birds has subsequently been retrapped.

Interestingly, recent analyses of Garden Warbler arrival and departure dates by RMRG (Harris & Roper in prep.) show trends towards spring arrival dates becoming earlier, and departure dates getting progressively later (fig. 1). This suggests that Garden Warblers are remaining in the UK, on average, for two or more weeks longer than was the case 25 years ago. It will be interesting to determine whether this is a trend that is developing across the whole of the UK.

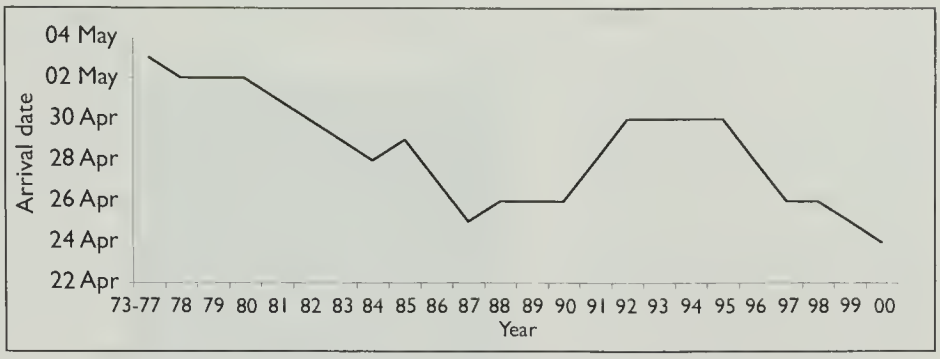


Fig. 1a. Spring arrival dates for Garden Warblers *Sylvia borin* at Rye Meads, Hertfordshire, 1973-2000 (data plotted using a five-year rolling mean).

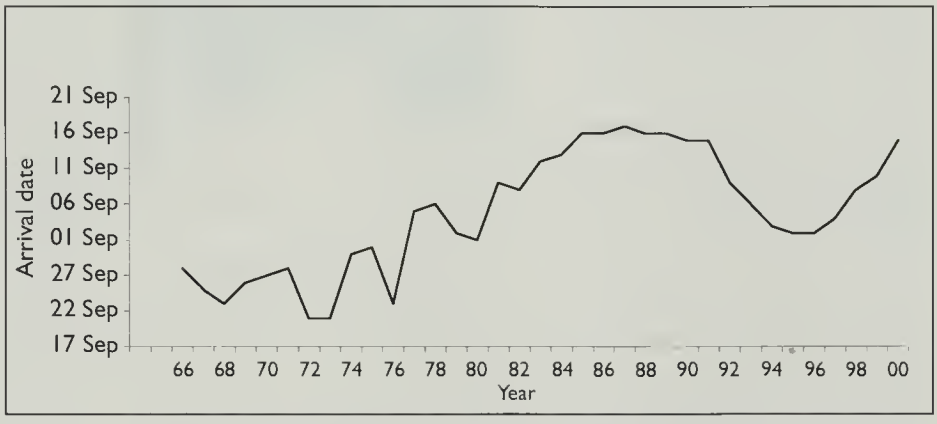


Fig. 1b. Autumn departure dates for Garden Warblers *Sylvia borin* at Rye Meads, Hertfordshire, 1966-2000 (data plotted using a five-year rolling mean).

On 17th August 2004, Nunnery Ringing Group (Thetford, Norfolk) caught an adult Garden Warbler showing two retained juvenile tail feathers which would typically have been replaced during its moult the previous winter. On closer examination, it was also noted that this bird also had 14 rectrices rather than the usual 12. Furthermore, these were of three different generations, based on the wear of feather tips. The two 'extra' feathers appeared to be of the oldest generation, and were in the centre of the tail. This phenomenon is occasionally seen in some species, but we are not aware of it being recorded previously in Garden Warbler.

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Hissing display of incubating Marsh Tit and anti-predator response of young

While the hissing display of an incubating female Marsh Tit *Parus palustris* in response to a nest intruder was described long ago (Morley 1953), *BWP* states that it has not been described in detail. While inspecting a Marsh Tit nest in Monks Wood, Cambridgeshire, with P. E. Bellamy on 7th May 2004, however, I was able to make full notes on the display.

The nest was located 2 m from the ground in a vertical cavity within a damaged Ash *Fraxinus excelsior* stem. Using a miniature video-camera, equipped with eight light-emitting diodes for illumination and connected to a remote screen by a flexible cable, PEB and I could view the entire nest from above.

On this occasion we could clearly see the female (identified from colour rings) incubating the seven eggs, which were five days from hatching. As the camera was inserted into the cavity, which illuminated the nest, the female adopted a threatening position. This was characterised by legs splayed at either side and body

supported on the tarsi, wings slightly raised and half-open, tail half-fanned, mantle ruffled and head arched backwards to face the 'intruder'. The bill was partly open, and the bird was emitting a sustained rasping hiss. At a frequency of 3-4 seconds, the head would be thrust towards the camera, the wings pushed down and the body jerked forwards, coinciding with an explosive 'siss!' sound, after which the mandibles were snapped shut. The bird would then revert to the previous position and continue with the low rasping note before the next explosive hiss. This pattern continued for around a minute until the camera was removed. At no time could the bird see the human observers, although it may have been aware of our voices. The display closely resembled that of the Great Tit *P. major*, as described by Hinde (1952) and reported in *BWP*.

On 12th May, I inspected a nearby Marsh Tit nest in a coppiced ash stump, which contained six 15-day-old young. While the camera could not be inserted into this nest, it could nevertheless be used to illuminate the cavity for inspection by eye. As I did this, the young crouched deep into the cup, huddled together, heads held low. Both parents, also identified by colour rings, were by now scolding me from a nearby bush with the familiar 'pitchou' and nasal 'tchee-tchee-tchee...' calls. From within the nest, one of the chicks also began calling as I peered into the illuminated cavity. The sound was similar to the 'tchee' note of the adults, but more rasping and prolonged, lasting several seconds. Compared with the low rasping note given by the incubating female at the previous nest, this sound was higher-pitched and closer to the scolding calls of its parents. It was quite different from the chirruping begging calls normally heard when the young are being fed, and appeared to be in response to my intrusion. *BWP* states that there is no information on anti-predator responses of the young, of which I believe this to be an example.

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Common Chaffinch seizing Southern Hawker dragonfly

On 25th June 2004, in bright, sunny conditions, I saw an immature Southern Hawker *Aeshna cyanea* in straight flight over a field at West Bagborough, Somerset. Suddenly, a female Common Chaffinch *Fringilla coelebs* flew out from a nearby hedge to attack the dragonfly, which, after evasion tactics, was eventually seized by the bird. The Chaffinch disappeared with the dragonfly held almost transversely, and securely, in its bill.

While it is probably not uncommon for individual Chaffinches to predate the small and slender damselflies (Zygoptera) (see, for example, *Brit. Birds* 90: 368), it must be unusual for a large hawker dragonfly (Anisoptera) to be taken successfully. The length of a Southern Hawker is about 70 mm yet the Chaffinch carried it without any apparent difficulty.

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Reviews

BIRDS IN EUROPE: POPULATION ESTIMATES, TRENDS AND CONSERVATION STATUS

Compiled by Ian Burfield and Frans van Bommel. BirdLife International, Cambridge, 2004. 374 pages; maps, tables, figures, line-drawings. ISBN 0-946888-53-1. Hardback, £30.00.



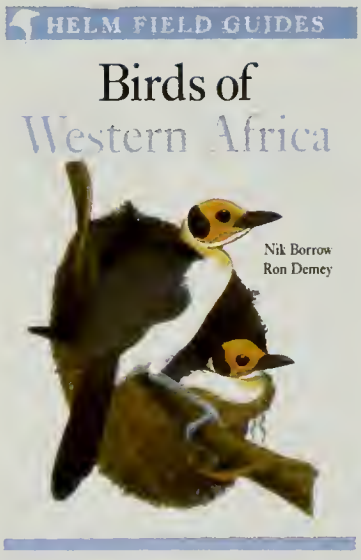
This is a revision of a book first published ten years ago (see *Brit. Birds* 88: 619), the first-ever review of the conservation status of all wild birds in Europe. The original (*BiE1*) became a cornerstone for conservationists and policy-makers, and was widely lauded. Chris Harbard called it 'monumental' in his review in *BB*. I confess that I do not possess a copy of the original (which was an oversight on my part), but monumental is also a suitable adjective for the new volume (*BiE2*). All 524 species which occur regularly in Europe are covered, with the standard treatment being half a page for each (the book is A4-sized). This includes a distribution map, with arrows to show population trends in each country; more detailed data on population size and trends (both breeding and wintering, where available) in tabular form; bar graphs to illustrate data quality; and a concise summary of each species' conservation status. The information is bang up to date; for example, all the *Seabird 2000* data are included for UK seabirds. The coverage is genuinely continent-wide, from Greenland to the Urals, from Svalbard to the Canaries; greater political stability in the Balkans and the Caucasus has allowed data from all European countries to be brought together for the first time. Although there is a frightening amount of information packed into each species account, the layout is generally clear and the explanation of how to interpret the symbols, abbreviations and so on is good – you can cut to the chase quickly if you are in a hurry.

Harbard was depressed by reading *BiE1* and, ten years on, the overall theme is one of even greater concern: 'Birds in Europe continue to be threatened by widespread environmental change, and many populations are now in deeper trouble than a decade ago.' Almost 43% (226) of the species analysed now have an Unfavourable conservation status, and arguably the most worrying of all the many statistics presented is that the status of 45 species moved from Favourable to Unfavourable during 1990-2000; a mere 14 showed the reverse trend. This is not just a book for scientists, statisticians and doom-sayers though, the subject matter affects all of us and it deserves a wide audience. Highly recommended.

Roger Riddington

FIELD GUIDE TO THE BIRDS OF WESTERN AFRICA

Nik Borrow and Ron Demey. Christopher Helm/A&C Black, London, 2004. 511 pages; 148 colour plates; 1,304 maps. ISBN 0-7136-6692-7. Paperback, £29.99.



This much-anticipated volume combines the plates and maps from the highly acclaimed *Birds of Western Africa* by the same authors (see *Brit. Birds* 95: 404) into a single pocket-sized field guide covering the 1,304 species recorded within the 23 nations comprising West Africa. Many of the 148 colour plates are taken from the earlier work, although ten are entirely new and others have been reworked to include additional species. Some of these, including Great Blue Heron *Ardea herodias* and Sociable Lapwing *Vanellus gregarius*, are new to the region, while others, such as Iberian Chiffchaff *P. ibericus*, appear as the result of a recent split. Names generally follow those used in *Birds of Africa* (*BoA*) and, consequently, several have changed since publication of the earlier volume, bringing them into line with those used in *BoA* Vol. 7.

Colour reproduction in the review copy is quite good, particularly on the warbler plates, and certainly better than on the corresponding plates in *Birds of Western Africa*, where colours often appear too rich and intense. The maps are relatively large for a guide of this

size, and should be fairly accurate, since earlier errors have been corrected and range changes and extralimital records up to March 2004 included. Descriptive text is minimal: restricted to an outline narrative discussing only the most salient plumage characters, habitat preferences and vocalisations, and limited to a maximum of six lines per species. The inclusion of the track number on the 15-CD set *African Bird Sounds* by Chappuis (2000) provides an invaluable reference, and really renders the inclusion of call descriptions largely irrelevant.

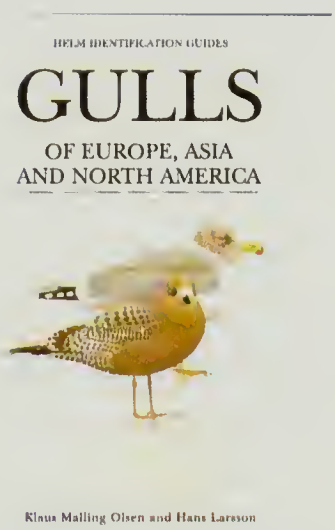
How does this book compare with the only other modern field guide to this region: *A Field Guide to Birds of The Gambia and Senegal* by Barlow, Wacher & Disley (1997)? The geographical coverage here is clearly greater, so for most countries there is no contest. But if travelling within these two popular birding countries, which is the better guide to travel with? The plates in Borrow & Demey are certainly superior, and with the text accompanying each plate, it is often quicker and easier to use than Barlow *et al.* With so many species included that do not occur in The Gambia and Senegal, the distribution maps are essential. These have been conveniently placed within two pages of each plate, and are sufficiently large, detailed and accurate to enable users to establish at a glance whether they are in the range of a particular species. Although the text is more expansive in Barlow *et al.*, it is not necessarily more detailed. So given a choice, I would opt for this guide as it covers the entire region, but carry either Barlow *et al.* for alternative images, or the earlier 2001 guide for a more detailed discussion.

What are the drawbacks? My only concern, albeit one which I have not yet had the opportunity to put to the test, is the sturdiness of the binding. Unlike Barlow *et al.*, this field guide is available only in paperback format, and personal experience of several Helm guides put into regular service in India suggests that they lack the robust construction needed for daily use. This book appears no different, so its lifetime, if used heavily, may be limited.

Peter Kennerley

GULLS OF EUROPE, ASIA AND NORTH AMERICA

By Klaus Malling Olsen and Hans Larsson. 608 pages; 83 full-page colour plates; 823 colour photographs; distribution maps; tables. Christopher Helm, A&C Black, London, 2003. ISBN 0-7136-7087-8. Hardback, £45.00.



Watching gulls is something of an obsession of mine. Gulls are like that – the more you learn, the more you want to learn (or realise that you don't know). Being 'good' comes with practice (I would call myself a 'trier'), but that requires effort: effort to find the 'right' place (municipal dumps, pig fields and reservoirs, both at home and abroad) and to go at the right time; effort to store the information you glean from such observations, via notes, video, digiscoped images and simple mental experience (new aspects crop up constantly to add to your knowledge and experience of the variability of gulls); and effort is also needed to find the right place to look for help.

I have learned much from friends, but also from the internet, which has been responsible for much of the recent dissemination of information. There are some seminal articles in magazines (you should see my well-thumbed and dog-eared copies of Lars Jonsson's articles on Yellow-legged Gulls in *Alula* and on Baltic Lesser Black-backed Gulls in *Birding World*), but there has been a relative paucity of books 'spreading the word'. Peter Grant's *Gulls: a guide to identification* (Poyser, 1982, revised in 1986) has been the gull-watcher's bible for a long time but, no matter how great it was, things have moved on and it no longer has all that the ardent 'laridophile' needs or wants. Modern skills have moved on: we now travel more; we have better optics to appreciate plumage subtleties; taxonomy has made great strides (even if there is still some way to go); and, not least, gull populations and distributions are dynamic.

But now we have this exciting book from the same pair of authors who brought us *Terns of Europe and North America* (Christopher Helm, 1985). I have always thought that it takes a brave author to try to put into words how to identify gulls. As many gull-watchers know, each observer looks at gulls slightly differently, and concentrates on slightly different aspects to identify them. It is so hard to be concise, hard to include every variation without confusing the reader, and it is difficult to avoid using generalisations ('often', 'frequently' or 'sometimes' are overworked when talking about gulls). If you publish something, you must be prepared to hear an opposing point of view, or expect to open yourself up to criticism. Does this book open up the mystery of gull-watching to a wider audience? Does it satisfy the 'experts'? Does it enthuse others who are merely confused when confronted by a group of roosting gulls at their local estuary?

In the Introduction, I was keen to see what advice is given on how to start watching gulls, and to get some idea of the personal processes by which the authors identify gulls. I wanted a little insight into what a gull-watcher should concentrate on first: age? structure? plumage tone? jizz?; in reality, the answer is 'yes' to all of these. But, apart from the brief preface, which describes some of the excitement of a moment's enlightenment, there are few personal touches in the introductory pages – perhaps a reaction to the concern about criticism? Instead, there are informative sections covering taxonomic decisions (such as treating American Herring Gull *Larus smithsonianus* as a separate species from European Herring Gull *L. argentatus*); the format of the species accounts; the ageing of gulls and age terminology; judging size, jizz, plumage tones and hues; judging photographs; and gull topography. The Kodak Grey Scale, useful when determining the tone of the upperparts, is mentioned briefly (and might usefully have been included) but compensation comes in the form of some lovely paintings that show the comparative plumage tones of large gulls in non-breeding adult plumage. In addition, there are seven pages illustrating the wing-tip patterns of large-gull taxa and the variations existing within them.

The individual species accounts form the bulk of the book, and to assess these, I turned to those species with which I am more familiar (Caspian *L. cachinnans*, Yellow-legged *L. michahellis* and Common Gull *L. canus*). Each species account contains text on the identification of all age-groups, followed by sections on voice, moult, description (including further details on the features of the nominate form), geographical variation (describing the various subspecies in detail), distribution and migration (including clear and colourful maps), and measurements. Also included is a brief summary on a coloured background, highlighting the key identification features; personally, I rarely even looked at this section. Within the text there are pages of Hans Larsson's wonderful paintings, showing standing and flight views of 'typical' plumage stages of the various forms within the taxon; pointers to the key features are placed opposite. Finally, each species account ends with a series of photographs covering all ages and subspecies, with brief captions revealing the key features shown in them.

In the case of Caspian Gull there are 32 highly enjoyable pages, though I did at times find the separate sections on 'identification' and 'description' a touch repetitive. The initial two or three paragraphs summarise beautifully the distinctive character of this lovely gull. 'With experience, jizz (and call) offers the best basis for identification. Caspian is typically lanky with curiously small head, slender body and long, slender legs – these structural differences are most marked in first-years. Although the size of Herring and Yellow-legged Gulls, it appears lighter and slenderer with a smaller, pear-shaped head, long, sloping forehead, angled hindneck and long neck... Breast often surprisingly protruding in relaxed birds; body slender with flat back lacking clear tertial step and flat belly... Large males may look like narrow-billed and slender Pallas's [Great Black-headed] Gulls, small females like over-sized Slender-billed Gulls.'

Though the text is concise, it is well edited and reads easily, and I found that I related well to the way in which KMO has described the species. It is, at times, generalised and we are warned of the possibility of variation causing problems, but I still found the detail more than adequate for the identification of Caspian and its separation from Yellow-legged and Herring Gulls. The inclusion of the forms *barabensis* (Steppe Gull) and *mongolicus* (Mongolian Gull) within Caspian Gull will be contentious, but the author is fully aware of this and summarises the possible taxonomic affiliations of both forms – the former with Heuglin's Gull *L. heuglini* and the latter with Vega Gull *L. vegae*. Nonetheless, I suspect that we still have more to learn about the various taxa involved. The photographs are well chosen and largely excellent (though I am not questioning its identity, I did find plate 438 noteworthy for the bird's similarity to eastern *michahellis*). Yellow-legged Gull has 22 pages and I found its account to be equally impressive, with good treatment of *atlantis* in particular.

Over the winter, I used the account of Common Gull regularly. Common Gull is treated as separate from the North American *brachyrhynchus* (Mew Gull), and the account includes *heinei* and *kamtschatschensis*. Again, I found the text, illustrations and photographs extremely informative, but was a little concerned with the generalisations about the comparison of the size of the three forms. Size is subjective, and perhaps rather too much is made of *kamtschatschensis* being larger. It is bigger, but would it really stand out amongst a mixed group of *canus/heinei*? There is also no mention of the '*thayeri*'-type wing pattern that is seen rarely in some adult Common Gulls; but these are niggly comments about something that is good in lots of ways.

This book is the new bible for those interested in gulls. It will add to the pleasure of those previously hooked, while it will provide others with the means to help them identify gulls during casual birding. Some of the text is hard reading, but it contains invaluable detail. It is a brave undertaking, but I for one am grateful to the author and the artist for their superb efforts.

Brian Small

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

Eagles and windfarms

Contentious windfarm applications are coming thick and fast in Scotland. Following the 'super windfarm' application for 234 turbines on Lewis, in the Western Isles (*Brit. Birds* 98: 222), comes another potentially devastating proposal in the Highlands. The 36 wind turbines planned for the Dunmaglass Estate in the Monadhliath Mountains between Cairngorm and Loch Ness would, at 610 m, be the highest windfarm in Britain. The developer's own environmental impact statement asserts that up to 11 Golden Eagles *Aquila chrysaetos* could be killed in collisions with the wind turbines that, at 110 m high, will stand taller than Big Ben. The Dunmaglass statement continues: '...this will impact on the potential for this area as a nursery ground for future replacement breeding birds in the region. It would also impact on the potential of the Monadhliaths to hold breeding pairs in the future.'

Local raptor expert Roy Dennis has commented: 'Golden Eagles will die, of that I have no doubt. This power station will turn a pristine wilderness into an industrial site.' David Bellamy (a former windpower enthusiast) has pithily observed that the Dunmaglass development would be 'selling Scotland's heritage for a mess of wattage'. The Stop Dunmaglass campaign (www.stopdunmaglass.com) has estimated that the Dunmaglass Estate and its absentee landlord, Sir Jack Hayward, will make £9m from renting out 10 km² of mountain plateau to Renewable Energy Systems, who in turn will make £120m from the electricity generated at Dunmaglass. The public consultation period ended on 18th April but people are urged to continue petitioning Scottish Ministers at Holyrood and their advisers in the Scottish Executive while they consider the application.



David Tipling/Windrush

139. Golden Eagle *Aquila chrysaetos*: a bleak future at Dunmaglass?

Eagles and windfarms II

This year's BOU Spring Conference, at Leicester University in April, was headlined *Wind, Fire & Water: renewable energy and birds*, and eagles figured prominently in the ten lectures devoted to birds and windfarms. The carnage caused among the Golden Eagle population by windmills at Altamont Pass, California, is well documented. There are approximately 7,000 turbines at Altamont and their lattice-work construction (providing perches for raptors) and healthy populations of small mammals around their bases provide a fatal attraction to eagles. The c. 700 turbines at Tarifa in southern Spain are also densely packed lattice towers but most of the casualties there have been migrant Griffon Vultures *Gyps fulvus* which have crossed the Strait of Gibraltar from Africa and are seeking updraughts to continue their onward migration. Both of these situations are well known but as Steve Percival observed in his comprehensive paper last month (*Brit. Birds* 98: 194-204): 'Little work has been published from those UK upland windfarm sites that may pose a significant risk to larger raptors such as Golden Eagle or Hen Harrier *Circus cyaneus*, so possible impacts on species such as these are not yet well understood in Britain.'

Step forward Mike Madders. His presentation to the BOU conference summarised his research on upland windfarms in Argyll & Bute and concerned both Golden Eagles and Hen Harriers. His study of the 46-turbine Beinn an Tuirc windfarm on the slopes of the highest hill on the Kintyre Peninsula gave some grounds for optimism. The windfarm developers, Scottish Power, created new feeding areas for the resident pair of Golden Eagles, away from the windfarm area. They did this by clearfelling conifers to create moorland habitat for Red Grouse *Lagopus lagopus* and Mountain Hare *Lepus timidus* – the eagles' main prey species. During hundreds of hours of observation, Mike found that the eagles moved

away from the turbine area and that the 'safe' feeding area became their preferred range.

So far so good. But now the developers have applied for an extension to the windfarm, with a further 45 turbines – which this time are 100 m rather than 60 m tall... Mike's study of Hen Harriers at the 35-turbine Cruach Mhor windfarm found that they too chose to forage away from the windfarm. The Kintyre Peninsula has a concentration of windfarms with three of Scotland's 17 operational sites on this land area. For details of ten further windfarms planned for Argyll & Bute see www.argyllwindfarms.com; and for a 'clickable' map with summaries of all the 200(!) windfarms currently planned across Scotland see www.scottishwindwatch.org. Richard Ford of the British Wind Energy Association told the BOU conference that, of c. 6,000 MW of wind energy currently in the planning process in the UK, almost 80% (4,750 MW) is targeted on sites in Scotland. A more detailed summary of the BOU conference will appear in a future issue of *British Birds*.

Windfarms and politics

As an increasingly visible – and controversial – presence in our countryside, windfarms will certainly be a political issue in some areas during the General Election campaign. Scottish Wind Watch will be fielding candidates on an anti-windfarm ticket, as they have done in previous elections over the past year (in the June 2004 European elections they polled 0.6% of the vote in Scotland – 7,000 votes). If your vote is governed by the political parties' stance on environmental and wildlife issues, the April 2005 issue of *BBC Wildlife* magazine is useful reading. All the major parties were quizzed on six key issues, including global warming and renewable energy. Labour say that they are committed to a 60% cut in CO_2 emissions by 2050 and reiterate the 10% target for electricity from renewable sources by 2010 (and 20% by 2020). The Conservatives say that they 'sanction the expansion of windpower... but want a broader and more diverse portfolio of renewables' (solar, tidal and wave power). The Liberal Democrats say that they will match the targets set by Labour but stress the need for a mix of renewable technologies: 'we won't simply rely on windfarms'. The Green Party flags up the potential of offshore windpower and sets a target of 40% of renewable energy by 2020. Plaid Cymru has set a 30% target of renewable energy in Wales by 2020, while the Scottish National Party is keen to exploit Scottish windpower (25% of Europe's wind resource) and offers a pledge that 50% of Scotland's power would come from renewables by 2020.

The BOU conference referred to above was opened by Environment Minister – and keen birder – Elliot Morley MP, who told his audience that the latest figure for electricity from renewables was 2.7% of supply in 2003. He then had to squirm in his seat as Dr Catherine Mitchell of the Warwick Business School described government progress on renewables installation from 1990-2005 as 'quite pitiful'. In particular, she highlighted the over-reliance on windpower as a 'quick fix' rather than pursuing expensive research into other technologies. Furthermore, she claimed that in order to meet its own targets on CO_2 cuts (with emissions of this greenhouse gas now rising), the Government was paving the way for the construction of new nuclear power stations.

A manifesto for birders

Readers with long memories will recall that the leaders of the three main political parties have previously been invited to canvass birders' votes in the pages of *British Birds*.

In October 1989 (shortly after the Green Party polled 15% of the vote in the June 1989 European elections), Margaret Thatcher, Neil Kinnock and Paddy Ashdown submitted their views on the environment (*Brit. Birds* 82: 434-441). When John Major became Prime Minister, the same courtesy was extended to him by *BB* (in January 1992, three months before a General Election; *Brit. Birds* 85: 2-5). Among references to the forthcoming Rio Earth Summit in June 1992 and the environment White Paper *This Common Inheritance*, Mr Major cited the reintroduction of White-tailed Eagles *Haliaeetus albicilla* to the Hebrides and Red Kites *Milvus milvus* in England and Scotland as positive examples of government conservation agencies' work. The 1992 General Election was one that the Tories expected to lose, but they hung on with a majority of just 21 seats. *The Sun* newspaper subsequently claimed that its anti-Labour coverage had swung the election and that 'It was The Sun wot won it' [*sic*]. But perhaps this overlooks the crucial role played by John Major's pitch to an elite cross-section of the electorate shortly before the poll. With hindsight, perhaps it was *British Birds* that won it!

My abiding memory of the 1992 election campaign (as a BBC reporter based in Plymouth) is that the famous Ancient Murrelet *Synthliboramphus antiquus* chose polling day, 9th April, to return to Lundy, off the north Devon coast, for its third and final season. Perhaps it was a bird of ill omen for the incumbent Conservative MPs in southwest England, since both North Devon and North Cornwall voted out the Tories and returned Liberal Democrat MPs that day...

The search for an enigma goes on

Winston Churchill famously described Russia as 'a riddle, wrapped in a mystery, inside an enigma' and it is in Russia where that most enigmatic of birds, the Slender-billed Curlew *Numenius tenuirostris*, previously bred – and hopefully still does so today. The last nest was found more than 80 years ago, near Tara (57°N 74°E) in the Omsk oblast of western Siberia in 1924. But where does this Critically Endangered species breed now? That was a question posed in *BB* three years ago by Adam Gretton and two colleagues (*Brit. Birds* 95: 334-344), following the write-up of the first British record, at Druridge Bay, Northumberland, in May 1998.

Readers will recall that the Druridge bird was a first-summer, so Slender-billed Curlew must have bred somewhere in the vastness of the Siberian steppes in 1997. But where? The Omsk oblast seems the obvious place to start the search but with 100,000 km² of suitable habitat, it's like finding a needle-billed bird in a haystack. A more scientific approach exploits the data available from museum specimens, through isotope analysis. Many Slender-billed Curlews were shot in the nineteenth and early twentieth centuries, and the chemical composition of the skins could provide vital clues to the modern-day breeding distribution of the species. In particular, the ratio of particular isotopes of elements in the specimens' feathers provides a 'fingerprint' that can be correlated with geological maps of these minerals in the soil – the soil where the invertebrates lived on which the curlews fed their chicks as they were growing their feathers.

So, is the search focusing on a particular region? David Gibbons, head of the RSPB's Conservation Science department and speaking at the recent Newcastle Science Festival, confirmed that the latest suggested location for any future expedition in search of the Slender-billed Curlew's nesting grounds is some 1,000 km south of the previous search area, i.e. towards the Russia/Kazakhstan border. We await more specific directions...

Malta one year on

The 1st of May marked the first anniversary of Malta's accession to the European Union, alongside 14 other states. But of the 15 new members, Malta alone was granted a derogation from the EU Birds Directive to permit spring shooting of Common Quail *Coturnix coturnix* and Turtle Dove *Streptopelia turtur*. So, with spring migration in full flow, the hunters are shooting Turtle Doves and Quails – and every other species that flies over the island. BirdLife Malta said: 'The derogation effectively destroys any hope that these birds can successfully breed again in our islands.'

As the *Times of Malta* reported on 6th April: 'It is not just these two species, but virtually everything that flies which seem to be a target for hunters: owls, hoopoes, herons, waders, harriers, kestrels and other birds of prey as well as swallows and other small birds were seen being shot or shot at from several localities over the past few days.' With just 24 police officers (working in two shifts of 12 people) to monitor illegal hunting, the hunters vastly outnumber the police as, on any given day, 12 officers have to cope with *12,000* hunters. Monitors from the European Commission were expected in Malta in mid April (as we went to press) to evaluate the hunting and trapping situation. They were also checking whether the Maltese Government had established a pilot study for captive breeding of finches (Fringillidae) and whether a study on mortality of finches in captivity had been carried out. The Government was also obliged to compel trappers to register their trapping sites by 1st May 2004 and the Commission delegation was expected to check this too.

Forty years of webbed feet on the web

WWT and JNCC have compiled 40 years of swan and goose surveys and uploaded the series to the WWT website (www.wwt.org.uk/monitoring/waterbirdreviews). Swans and geese undertake epic migrations from their breeding grounds in Arctic Russia, Iceland, Greenland and Canada to winter in Britain. Since the 1960s, WWT has organised national surveys to determine the fortunes of these species and these datasets are some of the longest of their kind.

The Waterbird Review Series brings together all available data on numbers, trends and feeding areas for each of the important sites in Britain in a comprehensive summary for site managers, conservationists, decision-makers and others charged with protecting these sites. The 11 volumes cover all three swans *Cygnus* along with the four most common 'grey geese' *Anser*, Barnacle Goose *Branta leucopsis* and three races of Brent Goose *B. bernicla*. Many of these populations have fared well in recent years with milder winter conditions, agricultural improvements providing them with plentiful food supplies and increased protection of important sites. Some, such as the Iceland Greylag Goose *A. anser* and Bewick's Swan *Cygnus columbianus*, still pose concerns, as numbers are declining. Others, such as the Svalbard and Canadian populations of pale-bellied Brent Geese *B. b. hrota*, are increasing, but remain scarce and depend on just a handful of special sites for their survival. David Stroud, Senior Ornithologist at JNCC, said: 'In particular, JNCC will use the reviews to advise Government on implementing international conservation policy, for example the African-Eurasian Migratory Waterbird Agreement under the Convention on Migratory Species and the EU Birds Directive.'

English Nature to become Natural England

Margaret Beckett MP, Environment and Rural Affairs Secretary, has issued an update on the overhaul of England's nature conservation agency. The name of the new agency will be Natural England, with the strapline 'For People, Places and Nature'. It will bring together English Nature, parts of the Countryside Agency and most of the Rural Development Service. It will be formally established by January 2007, subject to Parliamentary agreement, through the Natural Environment and Rural Communities Bill. This was published in draft on 10th February for pre-legislative scrutiny and will be introduced to Parliament as soon as Parliamentary time allows (assuming that Labour will be re-elected).

Until the legislation is passed, the existing bodies will form a confederation of partners, working together under a common overarching vision and purpose to deliver joint outcomes in partnership. Land managers will find it easier and simpler to get funding, help and advice from a single body. One person will make visits from the confederation, instead of two or more from the three bodies it brings together. Mrs Beckett said: 'Natural England will play a key role in fulfilling the Government's commitment to a better quality of life for everyone in both rural and urban areas. This name sums up what we want the new agency to be about – protecting and enhancing the national treasure of our green spaces in England for the enjoyment of current and future generations.'

For sale: the ornithological library of the late S. Dillon Ripley

When S. Dillon Ripley ended his 20-year tenure as Secretary of the Smithsonian in 1984, he left behind an institution which had tripled its annual visitor numbers to over 30 million and which had opened eight new museums (including Washington DC's most popular, the Air and Space Museum) and seven new research facilities. On his retirement he returned to his first and greatest passion – ornithology – joining the Museum of Natural History, where he worked until his death in March 2001. Ripley wrote extensively but is perhaps best remembered for the *Handbook of the Birds of India*, 1968-74, which he co-authored with Salim Ali, and the important monograph *Rails of the World*, 1977.

His ornithological collection reflects his passion and his scholarship. On his library and study shelves, next to the visually appealing colour-plate high spots, such as the 8vo edition of Audubon's *The Birds of America* (1840), might sit a pamphlet on a rare species of Asian gamebird or an important monograph on the birds of a certain area of the world. This is truly a working library with many books bearing notes and annotations; it is rich in obscure offprints and long runs of ornithological journals and periodicals – there are, for example, a complete 27-volume set of the British Museum *Catalogue of Birds*, edited by Richard Bowdler Sharpe, and a complete set from Vol. 1 to date of the *Journal of the Bombay Natural History Society*, each profusely illustrated with hand-coloured plates and full of scholarly essays and research.

The auction will take place on Friday 10th June 2005, at Bloomsbury House, 24 Maddox Street, London W1S 1PP, but all the books will be available to view in the saleroom for the three days before that. *BB* subscribers can obtain a free catalogue (normal price £15.00) by contacting Richard Caton at the address above (e-mail: caton@bloomsburyauctions.com) and quoting your *BB* subscription number.

Welsh Bird Report 2003

Pilgrims to Anglesey for the Black Lark *Melanocorypha yeltoniensis* in June 2003 will be interested to know that the 2003 *Welsh Bird Report* has been published by the Welsh Ornithological Society. In its 120 pages there's the usual detailed systematic list and ringing report, plus notes on Red Kite breeding in 2003 and that Black Lark. The report, price £5.00, can be obtained from Jon Green, Crud yr Awel, Bowls Road, Blaenporth, Cardigan SA43 2AR. In addition, the 2003 Rare Birds in Wales Report – a rundown of Welsh rare birds in 2003 with many colour photos – is available for £2.00 from the same address. It is also accessible on the WOS website (www.welshornithologicalsociety.org.uk). Finally, and again also available from the same address, *Birding in Pembrokeshire* is a new book (£12.95) which includes a revised systematic list, site guides, and information on rarities, good days out and notable Pembrokeshire ornithologists. All prices include p&p; please make cheques payable to 'Birding in Pembrokeshire'.

James Lidster joins the BBRC

The BBRC is pleased to announce that James Lidster, from Dorset, has been appointed as the next member of the Committee. James is the Dorset County Recorder, and his name will be familiar to many *BB* readers as he is a SUNBIRD tour leader and the author of several Monthly Marathon solutions in recent months. He is already well-travelled, with a wide interest and expertise in identification matters, and will undoubtedly be a great asset to BBRC. James was the BBRC nominee for this vacancy, and has been elected unopposed. While we are delighted to welcome James, we were disappointed that there were no other nominees, as we feel that an election is good for the democratisation of BBRC.

(Colin Bradshaw)

Recent reports

Compiled by Barry Nightingale and Anthony McGeehan

This summary of unchecked reports covers mid March to mid April 2005.

Garganey *Anas querquedula* An influx in early April included 52 at Thurlestone Bay (Devon) on 1st April, ten at Collard's Lake (Kent) on 2nd April and five on St Mary's (Scilly) on 3rd-4th April. Ferruginous Duck *Aythya nyroca* Blithfield Reservoir (Staffordshire), 23rd-25th March; Abberton Reservoir (Essex), long-stayer to 23rd March. Lesser Scaup *Aythya affinis* Bough Beech Reservoir (Kent), 16th March (probably the long-stayer previously at Scotney Gravel-pits on the East Sussex/Kent border); Blair Drummond Gravel-pits (Forth), 24th-30th March; Beesands Ley (Devon), long-stayer to 28th March. White-billed Diver *Gavia adamsii* Ronas Voe (Shetland), 16th March; Lewis (Western Isles), two, 3rd April, one to 6th April.

Night Heron *Nycticorax nycticorax* Mizen Head (Co. Cork), 2nd April; Nanjizal (Cornwall), 3rd April. Cattle Egret *Bubulcus ibis* Kingston Seymour, long-stayer to 10th April, with it or another at Frampton (both Gloucestershire), 4th-6th April. Great White Egret *Ardea alba* Ramsey Island (Pembrokeshire), 19th March, then presumably same National Wetlands Centre for Wales (Carmarthenshire), 20th-27th March; Lawling Creek (Essex), 20th March; Endrick Water (Clyde), 26th March to 3rd April; Gorseinon (Glamorgan), 31st March; Ouse Washes (Cambridgeshire), 1st April; Foryd Bay (Gwynedd), 5th April. Purple Heron *Ardea purpurea* Tacumshin (Co. Wexford), 27th March to 9th April; North Gare (Cleveland), 5th April; Tresco (Scilly), 8th-9th April; Wareham (Dorset), 6th-10th April. White Stork *Ciconia ciconia* Exeter (Devon), 23rd March; between Littleport and Southery (Cambridgeshire), 27th March; Neath (Neath), 28th March; Marsh Lane NR (West Midlands), 28th March and 10th April; West Moor (Somerset), 30th March to 1st April; Bridport (Dorset), 1st April; Bramhay (West Yorkshire), 3rd April; Little Haldon (Devon), 5th April; Topsham (Devon), 5th April.

White-tailed Eagle *Haliaeetus albicilla* Humberston (Lincolnshire), 23rd March, presumably the long-stayer referred to in previous 'Recent reports'; presumed same, Simonside (Northumberland), 3rd April. Gyr Falcon *Falco rusticolus* Brandon Point (Co. Kerry), 5th April.

Killdeer *Charadrius vociferus* Breydon Water (Norfolk), 28th-29th March. Short-billed Dowitcher *Limnodromus griseus* Booterstown (Co.



David Tipling/Windrush

140. Male Lesser Scaup *Aythya affinis*, Bough Beech Reservoir, Kent, March 2005.



Jim Lawrence

141. Killdeer *Charadrius vociferus*, Breydon Water, Norfolk, March 2005.



Marc Read

142. Great Spotted Cuckoo *Clamator glandarius*, Worthing, West Sussex, April 2005.

Dublin), from late winter until 8th April. Long-billed Dowitcher *Limnodromus scolopaceus* Newport Wetlands (Gwent), 20th-27th March.

Franklin's Gull *Larus pipixcan* Newnham (Gloucestershire), 22nd March; Newbiggin, 2nd April, then Ashington, 3rd April, and Castle Island (all Northumberland), 6th April. Bonaparte's Gull *Larus philadelphia* Thurso (Highland), long-stayer seen again on 24th March; Harris (Western Isles), long-stayer seen again on 27th March and 8th April. Ross's Gull *Rhodostethia rosea* Loch of Tankerness (Orkney), 8th April.

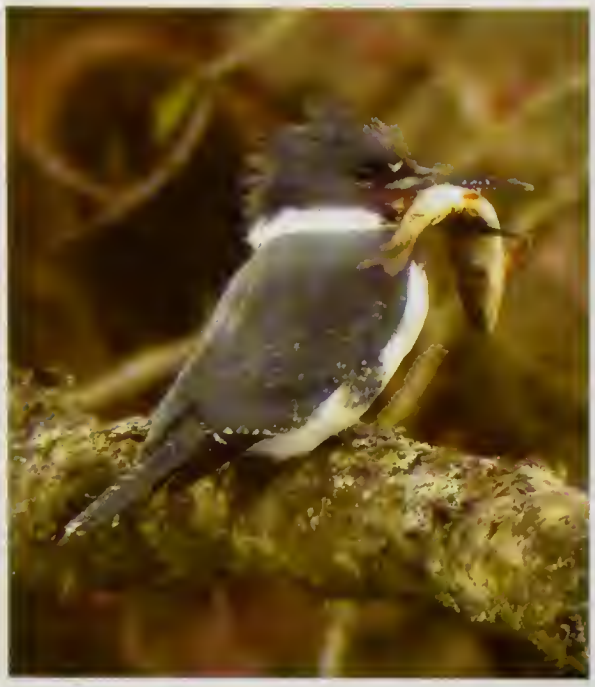
Great Spotted Cuckoo *Clamator glandarius* Shoreham-by-Sea (West Sussex), 3rd April; another, Worthing (West Sussex), 3rd-9th April. Snowy Owl *Bubo scandiacus* Harris (Western Isles), 19th March; Stronsay (Orkney), 26th-30th March; Fair Isle (Shetland), 2nd April. Alpine Swift *Apus melba* Polzeath (Cornwall), 20th March; Dungarvan (Co. Waterford), 3rd April; Sizewell (Suffolk), 5th April. Belted Kingfisher *Ceryle alcyon* Shugborough (Staffordshire), 1st April, same Eastrington Ponds (East Yorkshire), 2nd April, same Peterculter (Northeast Scotland), 4th-9th April.

Waxwing *Bombycilla garrulus* Small flocks were widespread throughout the period, two of the larger ones being 200 in Aberdeen (Northeast Scotland) and 350 near Doncaster (South York-



Deryk Shaw

143. Snowy Owl *Bubo scandiacus*, Fair Isle, Shetland, April 2005.



Jim Lawrence



Mike Malpass

144 & 145. Male Belted Kingfisher *Ceryle alcyon*, Peterculter, Northeast Scotland, April 2005.

shire), both 10th April. Bluethroat *Luscinia svecica* of white-spotted race *cyanecula* Landguard (Suffolk), two, 20th-22nd March, one to 23rd March. 'Siberian Stonechat' *Saxicola torquatus maurus* Barnes Wetland Centre (London), 24th March. Northern Wheatear *Oenanthe oenanthe* Widespread influx from mid March, including at least 120 at Portland (Dorset), 16th-17th March.

Short-toed Treecreeper *Certhia brachydactyla*



John Carter

146. Male 'White-spotted Bluethroat' *Luscinia svecica cyanecula*, Landguard, Suffolk, March 2005.

Bradwell-on-Sea (Essex), 6th-10th April. Penduline Tit *Remiz pendulinus* Grove Ferry (Kent), two, 30th March. Woodchat Shrike *Lanius senator* Galley Head (Co. Cork), 2nd April; Bryher (Scilly), 3rd April. European Serin *Serinus serinus* Margate (Kent), 18th March; Beachy Head (East Sussex), 26th March; Brighton (East Sussex), 26th March; Edburton (West Sussex), 28th March; Portland, 30th March and 8th April; Gammon Head (Devon), three, 2nd April; Reculver (Kent), 11th April. Common Rosefinch *Carpodacus erythrinus* Cunningsburgh (Shetland), 24th-29th March.



Steve Young/Birdwatch

147. Short-toed Treecreeper *Certhia brachydactyla*, Bradwell-on-Sea, Essex, April 2005.

New Zealand has the most diverse seabird community in the world with 84 species breeding in the New Zealand region, nearly 50% endemic. Many other seabirds visit New Zealand waters across the Great Southern Ocean and the Pacific. There are more specialities on land with three endemic families – kiwis, NZ wattlebirds and NZ wrens. Extraordinary parrots, remarkable honeyeaters. A trip Downunder is a truly memorable birding experience.

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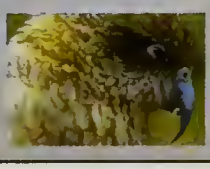
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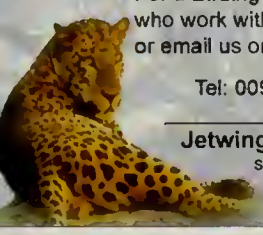
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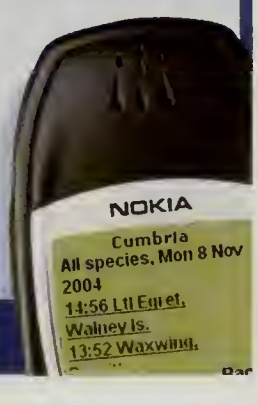
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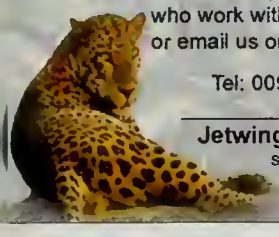
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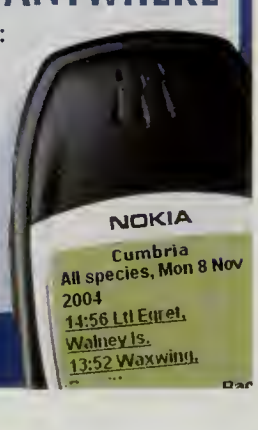
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The status of Northern Gannet in Britain & Ireland in 2003/04

Sarah Wanless, Stuart Murray and Michael P. Harris

ABSTRACT In 2003/04 there were about 261,000 occupied nest-sites of Northern Gannets *Morus bassanus*, in 24 colonies, in Britain & Ireland. Three new colonies had been established since the last census in 1994/95. Although the British and Irish population was 12% higher than in 1994/95, the average rate of increase (1.2% per annum) over this period was appreciably lower than during the previous decade.

We probably know more about the breeding distribution and abundance of seabirds than of any other avian group (Croxall *et al.* 1984; Brooke 2004), and, undoubtedly, the Northern Gannet *Morus bassanus* (hereafter 'Gannet') is one of the seabirds about which we know most. It is the largest, and arguably the most spectacular species in the North Atlantic. Its breeding range extends from Brittany north to Iceland and east to the Murman coast of Russia, and from the Gulf of St Lawrence to Labrador in the west Atlantic.

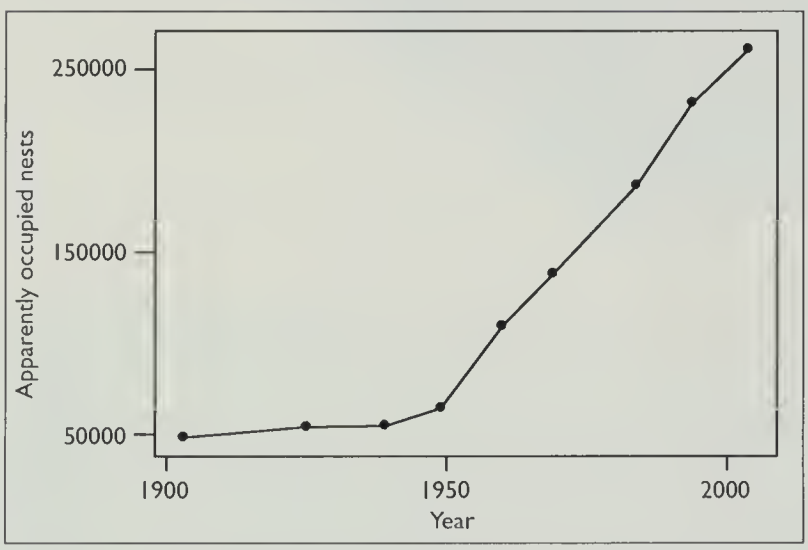


Fig. 1. The long-term increase in the British and Irish population of Northern Gannets *Morus bassanus*, 1904-2004.

There are relatively few breeding colonies and most are on offshore islands or stacks. Probably because of their spectacular locations, gannetries hold a particular fascination for ornithologists and there is a well-established tradition of visiting colonies and making counts. Censuses of the entire world population were made in the 1900s, 1939, 1949, 1969/70, 1984/85 and 1994/95 with the result that changes in numbers at individual colonies and in the world population are better known than for any other relatively common bird (Gurney 1913; Fisher & Vevers 1943, 1944; Wanless 1987; Lloyd *et al.* 1991; Murray & Wanless 1997). The available historical information indicates that numbers in Britain & Ireland declined during much of the nineteenth century, mainly owing to excessive harvesting of eggs and chicks for human consumption. Following protection, however, numbers had started to recover by the end of the century. Initially, the rate of increase was slow but, from about 1939 onwards, it gained momentum and for much of the second half of the twentieth century the

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Stuart Murray/SNH/CEH

148. Stac Lee, St Kilda, Western Isles, 21st June 2004. This spectacular, 180-m-high sea rock holds more than 13,000 pairs of Northern Gannets *Morus bassanus*, half of which are crammed onto the summit table.

world population increased at an average rate of approximately 2% per annum (p.a.). The increase in Gannet numbers is thus best considered not as a population explosion, but rather as a long-term recovery from intense persecution. This recovery occurred during a period when feeding conditions were favourable, with good stocks of small- to medium-sized pelagic shoaling fish such as mackerel *Scomber scombrus*, herring *Clupea harengus* and sandeels *Ammodytes* spp. (Nelson 2002). These long-term trends in the British and Irish population are summarised in fig. 1.

Recent censuses of British and Irish colonies have been carried out every ten years and, since one was scheduled for 2004/05, counts of gannetries were of relatively low priority during *Seabird 2000* (Mitchell *et al.* 2004). Nonetheless, during the course of this comprehensive inventory of British and Irish seabirds, carried out between 1998 and 2002, counts were made of 14 of the 21 extant colonies. The gannetries covered tended to be the smaller, more accessible ones and results from these indicated that numbers were still increasing (Wanless & Harris 2004). As planned, a co-ordinated survey of Gannets was carried out mainly in 2004, and this paper presents counts for 22 of the 24 colonies for which counts were attempted. The two not counted were those on Ortac and Les Etacs in the Channel Islands. Detailed changes at individual gannetries are presented elsewhere (Wanless *et al.* 2005a,b). In this paper, our aim is to present an overview of the total population, to describe three new colonies (two in Scotland and an embryonic one in Wales) that have been founded recently, and to highlight the slowing down of the rate of increase of the total population.

Counts

Most British and Irish Gannet colonies are on steep cliffs on offshore islands. Gannets are large and conspicuous and this facilitates the rapid discovery of new colonies. Since *Seabird 2000*, colonies have been founded on Sule Skerry and Westray, both in Orkney, and on St Margaret's Island, Pembrokeshire (fig. 2). Counting nests at all but the smallest gannetries is a formidable undertaking, hence the larger colonies tend to be counted infrequently and usually only during dedicated surveys.

Aerial surveys of ten of the major colonies were carried out in 2004. Such surveys require a slow, twin-engine aircraft; an experienced pilot; at least two photographers with a reasonable tolerance of airsickness; and good weather. The ideal time for a survey is between mid May and

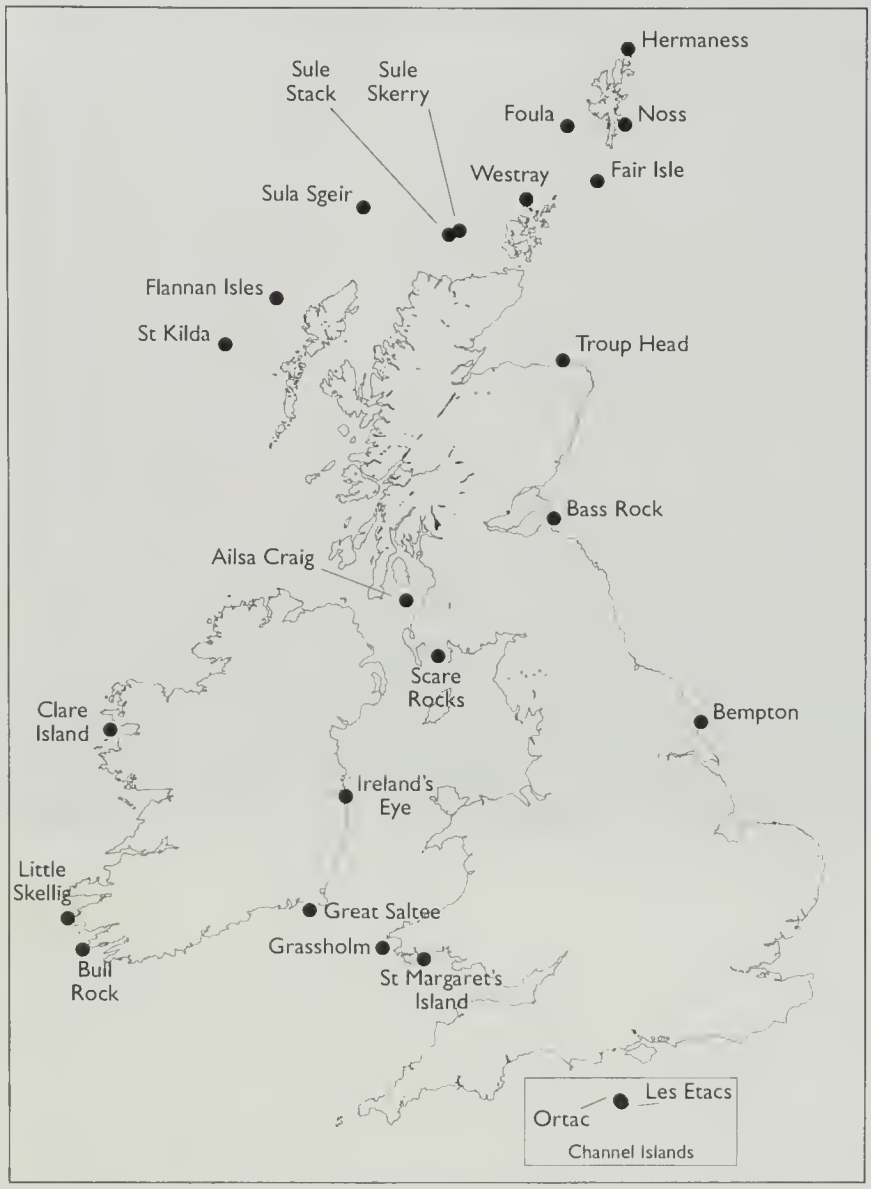


Fig. 2. The locations of Northern Gannet *Morus bassanus* colonies in Britain & Ireland in 2004.

mid June, but covering all the colonies within this time frame is dependent on favourable weather conditions, in particular excellent visibility, low wind speeds and a high cloud-base. Surveys must also fit in with military activities; for example, St Kilda, Scare Rocks and Sule Stack are all subject to various restrictions.

In general, breeding Gannets are unaffected by slow aircraft whereas most nonbreeding birds fly off. The usual procedure is, therefore, to wait until these birds have left before starting to take photographs. At the Bass Rock and Grassholm, however, the nonbreeders remain stubbornly on the ground. Consequently, aerial photographs of these two colonies include both the breeding and the nonbreeding components of the population. Visits were therefore made to the Bass Rock on 17th July 2004 and to Grassholm on 5th September 2004 to establish the boundaries of the breeding areas shown by the aerial photographs.

The 2004 survey was carried out using similar methods to those used in 1984/85 and 1994/95 (Murray & Wanless 1986, 1997). Each gannetry was photographed several times and from several different angles, using 35-mm reflex cameras fitted with 50-mm lenses and using 64 or 100 ASA colour-slide film, to ensure complete coverage. The resulting colour transparencies were used to form a mosaic of the colony to avoid missing areas and double-counting. In general, the same count-section boundaries were adopted as in the previous two censuses.

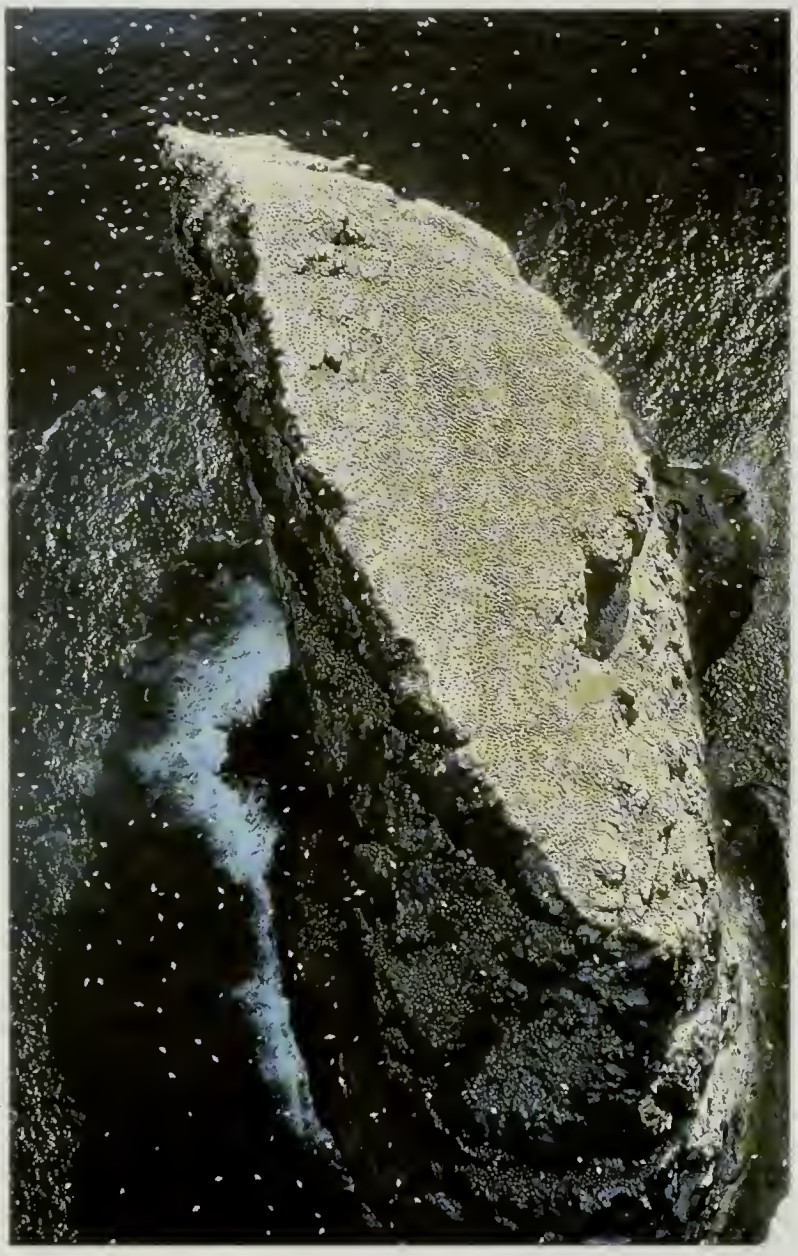
The only practical counting unit is the 'apparently occupied site' (AOS), a site occupied by one or two Gannets, irrespective of whether nest material is present. Slides were projected onto a suitable surface and each AOS marked off as it was counted. Sites clearly occupied by nonbreeders were excluded wherever possible. Counts were made by one or two observers and the figures presented here are the means of these counts. Even when photographs are of high standard, there is variation both among counts made by the same observer and among those made by different observers (Harris & Lloyd 1977). Within-observer differences in 2004 were generally less than those between observers, with values for the latter of the order of 5-10%. These values were similar to those recorded in the 1984/85 and 1994/95 surveys (Murray & Wanless 1986, 1997; Wanless 1987).

Direct field counts of apparently occupied nests (AON) were made at nine colonies. On Foula, AOS were counted directly, while at Sule Skerry both a direct field count and a count from a land-based photograph were made.

Details of methodology and totals for all the

Table 1. The most recent counts of gannetries in Britain & Ireland. Counts from photographs were apparently occupied sites (AOS), most field counts were of apparently occupied nests (AON).

	Colony	AOS/AON	Date of count	Method	Source	% p.a. change since last count
Scotland	Bass Rock	48,065	21 June 2004	Aerial photography	Wanless *et al.* (2005a)	1.9
	Troup Head	1,547	1 July 2004	Field count	Mavor *et al.* (2005)	20.5
	Fair Isle	1,875	13 June 2004	Field count	D. Shaw/Fair Isle Bird Observatory (*in litt.*)	8.6
	Noss	8,652	8-14 June, 9-30 July 2003	Field count	Marshall & Thomas (2003)	1.9
	Hermaness	15,633	26 June, 22-26 July 2003	Field count	Duffield (2003)	3.0
	Foula	919	3 July 2004	Field count	S. Gear (*in litt.*)	8.7
	Westray	14	21-22 June 2004	Field count	K. Judd/RSPB (*in litt.*)	
	Sule Skerry	57	8 July 2004	Ground photograph	D. Budworth/ A. Blackburn (*in litt.*)	
	Sule Stack	4,618	26 May 2004	Aerial photography	Wanless *et al.* (2005a)	-0.6
	Sula Sgeir	9,225	26 May 2004	Aerial photography	Wanless *et al.* (2005a)	-1.2
	Flannan Isles	2,760	26 May 2004	Aerial photography	Wanless *et al.* (2005a)	6.7
	St Kilda	59,622	21 June 2004	Aerial photography	Wanless *et al.* (2005a)	-0.1
	Ailsa Craig	27,130	6 June 2004	Aerial photography	Wanless *et al.* (2005a)	-2.0
	Scare Rocks	2,394	6 June 2004	Aerial photography	Wanless *et al.* (2005a)	2.3
	Total	182,511				0.6
Ireland	Ireland's Eye	285	13-16 June 2004	Field count	O. Merne (*in litt.*)	20.3
	Great Saltee	2,446	7-8 June 2004	Field count	O. Merne (*in litt.*)	6.9
	Little Skellig	29,683	17 June 2004	Aerial photography	A. Walsh/S. Murray (*in litt.*)	1.2
	Bull Rock	3,694	17 June 2004	Aerial photography	A. Walsh/S. Murray (*in litt.*)	7.4
	Clare Island	3	July 2004	Field count	S. Callaghan (*in litt.*)	0.0
	Total	36,111				2.0
Wales	Grassholm	32,094	12 July 2004	Aerial photography	C. M. Perrins/ Wanless *et al.* (2005b)	1.6
	St Margaret's Island	1	22 May 2004	Field count	S. Sutcliffe (*in litt.*)	
	Total	32,095				1.6
England	Bempton	3,940	29 July 2004	Field count	T. Charlton/RSPB (*in litt.*)	9.2
Channel Islands	Ortac	2,500	late May 1999	Aerial photography	J. Hooper/La Société Guernesiaise (*in litt.*)	3.6
	Les Etacs	3,450	late May 1999	Aerial photography	J. Hooper/La Société Guernesiaise (*in litt.*)	0.4
	Total	5,950				
Total population		260,607				1.2



Stuart Murray/SNH/CEH

149. Overhead view of Stac Lee, St Kilda, Western Isles, on 21st June 2004, showing the southwest half of the summit table with about 5,000 pairs of breeding Northern Gannets *Morus bassanus*.

colonies are given in table 1. Unless otherwise stated, totals for 2004 are compared with those from the 1994/95 survey. Following the previous convention, overall population estimates were obtained by combining colony counts, even if different counting units had been used, and expressing these as AOS.

Scotland

Scotland remains the Gannet's stronghold, both in terms of colonies (14 in 2004) and in terms of population size (182,511 AOS). However, overall numbers had increased only by 6% since 1994/95, an annual average rate of 0.6% p.a.

The 2004 survey showed that St Kilda, Western Isles, remains the world's largest colony of Gannets with birds breeding on the island of Boreray and its two stacks, Stac an Armin and Stac Lee (32,333, 13,369 and 13,920 AOS, respectively). Overall there had been virtually no change in numbers since 1994. In contrast, the second-largest colony, on the Bass Rock, East Lothian, had increased by 21% since 1994, to 48,065 AOS. The third-ranked gannetry, on Ailsa Craig, Kyle and Carrick, had fared less well and, despite a slight increase in the extent of the colony, numbers (27,130 AOS) were 13.4% lower than in 1995, suggesting an average rate of decrease of 2% p.a. The 1995 count was made from photographs taken relatively late in the season (5th August) and it is possible that there could have been proportionally more immatures attending the colony than during the 2004 count, which was made two months earlier (6th June). However, detailed comparison of the two sets of photographs showed a marked decrease in the density of occupied sites and it seems likely that numbers had genuinely declined. Counts at this colony made from the sea between the 1940s and 1970s showed periodic, inexplicable fluctuations in numbers of occupied sites (Nelson 2002). Although there have been no recent records of population crashes, it is possible that one occurred in 2004. Clearly, a repeat census is required in the near future to confirm the status of this colony. The two larger Shetland colonies, at Hermaness (15,633 AON) and on Noss (8,652 AON), were counted in 2003 and the totals indicate a continuing increase since the mid 1990s, although the total for Hermaness was slightly lower than the count of 16,386 AON made in 1999.

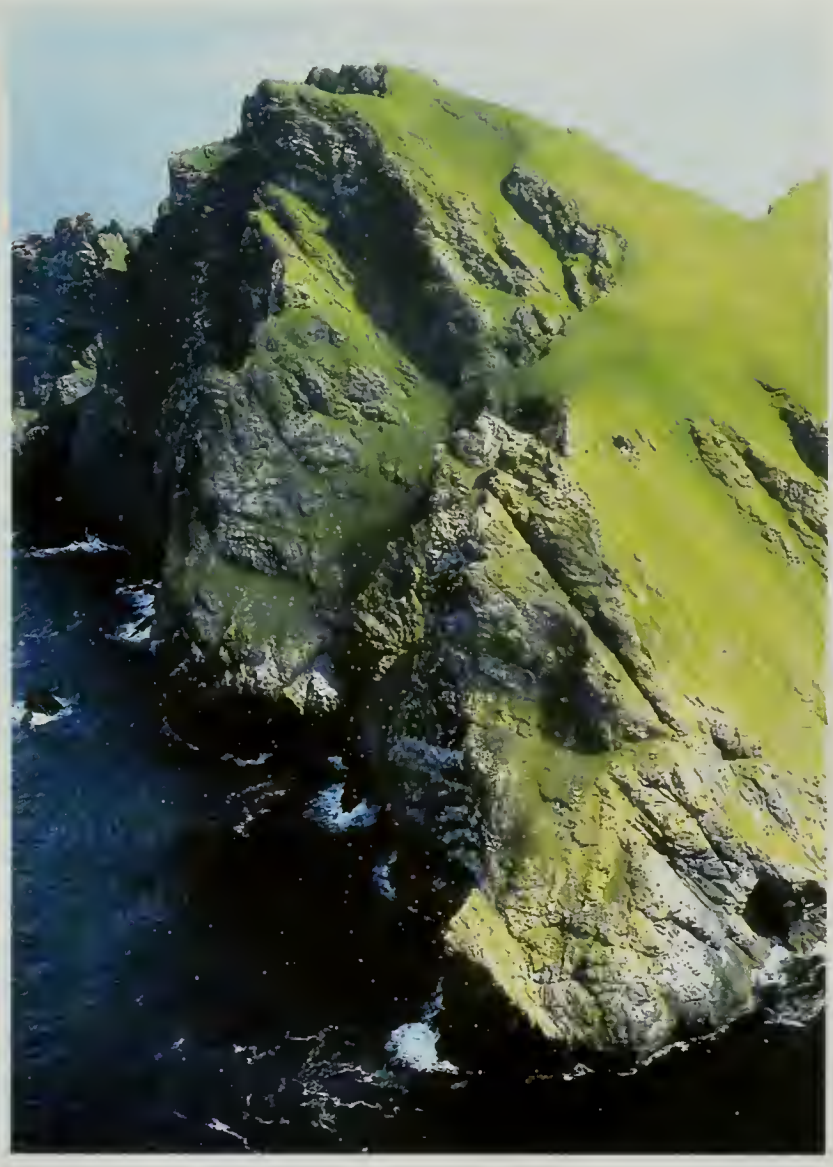
There had been a decline of 11.6% on Sula Sgeir (9,225 AOS), Western Isles, probably due to a reduction in overall nesting density, since the extent of the colony appeared unchanged since 1994. Young gannets have been harvested at this colony since at least the sixteenth century and this practice still continues, but under licence. The Men of Ness, from the Isle of Lewis,

spend a week or so on the rock in late summer, killing and salting young gannets (or 'gugas') to be taken back for distribution to friends and for sale (Beatty 1992). The possible effect of this 'hunt' is discussed later. On Suie Stack, Orkney, numbers (4,618 AOS) have shown little change over the last 30 years and it seems likely that the colony is full up, since few apparently suitable areas remain unoccupied.

All the five smaller Scottish colonies that were extant in 1994/95 showed substantial increases: Flannan Islands, Western Isles (92%); Scare Rocks, Galloway (23%); Fair Isle and Foula, both in Shetland (127% and 130% respectively); and Troup Head, Northeast Scotland (200%).

New colonies have been founded on two islands in Orkney since the 1994/95 survey. At Sule Skerry, Gannets were periodically recorded ashore on the west side of the island between 1992 and 2001 (Sule Skerry Ringing Group *in litt.*), and in 2002 birds were 'loafing' in the Stack Geo area among nesting Common Guillemots *Uria aalge*. The first breeding record was in 2003, when 15 nests with either eggs or chicks were recorded on 13th July (Blackburn & Budworth 2004). The mean count of 57 AOS in 2004 was made from a photograph taken from the land on 8th July by D. Budworth. The gannetry on sheer cliffs on the Noup, Westray, was first noted in 2003, when five nests were found, again among Common Guillemots. At least two eggs were laid and one chick probably fledged (RSPB pers. comm.). In 2004, there were 14 nests in three discrete groups.

In the past, one or two pairs of Gannets have bred on two of the Shiant Islands in The Minch, between the Outer Hebrides and mainland Scotland (Murray & Wanless 1997), but no birds were seen ashore in 2004 (pers. obs.). Gannets are occasionally recorded ashore on Am Balg, Sutherland, for example in 1996 and 1997 (W. Boyd Wallis pers. comm., *Scottish Bird Report* for 1997) but breeding has not been proved. No birds were seen here on 28th May 2004 (pers. obs.). A pair bred on Rockall, 300 km west of St Kilda, in 1992 (Belaoussoff 1993) but this remote rock was not checked in 2004.



Stuart Murray/SNH/CEH

150. Boreray, St Kilda, Western Isles, 21st June 2004, the most challenging gannetry in Britain & Ireland to survey. The 32,000 pairs of Northern Gannets *Morus bassanus* nest in groups scattered over more than a kilometre of complex cliff architecture, from sea level to the summit of this 400-m-high island.

Ireland

There are five gannetries in Ireland. In 2004 these contained a total of 36,111 AOS, an increase of 20% since the 1994/95 survey, at an average rate of 2.0% p.a.

The largest colony, on Little Skellig, Co. Kerry, had 29,683 AOS in 2004, a 12% increase at 1.2% p.a. since the last count, in 1994.

continued on page 289



Stuart Murray/SNH/CEH

151. Roareim, Flannan Isles, Western Isles, 26th May 2004. A view from the south showing the whole gannetry. In 2004 there were 2,760 AOS, nearly double the 1994 count.



Stuart Murray/SNH/CEH

152. The colony of Northern Gannets *Morus bassanus* on the Bass Rock, East Lothian, viewed from the northwest, 21st June 2004. The doubling in size of this colony, to 48,065 AOS since 1985, makes this Britain & Ireland's second-largest colony. The bird-free hollow below the summit is a long-abandoned garden. The area immediately behind the garden, and to the left of the summit, is occupied mainly by nonbreeding birds. This colony is increasing more rapidly than expected for its size, and could soon overtake St Kilda as the largest gannetry in the east Atlantic.



Stuart Murray/SNH/CEH

153. The southern part of the gannetry around the helipad and lighthouse at Sula Sgeir, Western Isles, on 26th May 2004. Approximately 2,000 young Northern Gannets *Morus bassanus* are harvested at this colony each year for human consumption and numbers here declined by more than 11% between 1994 and 2004.



Alyn Walsh

154. Numbers of nests at the Irish colony on Bull Rock, Co. Cork, doubled between 1994 and 2004 after 25 years of relative stability. This is probably at least partly owing to a lessening of disturbance following the automation of the lighthouse in the late 1980s.



Christopher Perrins/CCW/CEH

155. A view showing most of the 32,000 pairs of Northern Gannets *Morus bassanus* on Grassholm, Pembrokeshire, on 12th July 2004. The colony continues to expand along its landward edge, particularly in the area shown in the bottom centre of this picture. A visit on 5th September 2004 revealed that all the birds on The Tump (the large isolated rock in the background), as well as those in the isolated groups at the extreme left and along the fringe of the colony, were nonbreeders. A land visit to delimit the breeding area was essential before the formidable task of counting nesting pairs from the aerial photographs could begin.



Jez Blackburn

156. Few ornithologists have landed on Sule Stack, Orkney. This is the view of the north rock as seen by the Sule Skerry Ringing Group on a visit on 20th July 2003. Counts suggest that this colony may be full.



Dave Budworth

157. The newly founded gannetry on Sule Skerry, Orkney, 8th July 2004. Northern Gannets *Morus bassanus* were first recorded breeding among Common Guillemots *Uria aalge* on Sule Skerry in 2003. The nearby colony of Sule Stack is visible in the background.

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Numbers on Bull Rock, Co. Cork, showed little change between 1970 and 1994. However, the 2004 count of 3,694 AOS indicated an approximate doubling in size since 1994, mainly due to a large expansion of the colony near the lighthouse. Numbers on Great Saltee, Co. Wexford (2,446 AON), and Ireland's Eye, Co. Dublin (285 AON), continued to increase. Three nests were recorded on a small stack at Clare Island, Co. Mayo. There appears to be no room for further expansion here since this colony has never held more than 4 pairs since it was founded in 1978.

Wales

The gannetry on Grassholm, Pembrokeshire, has long been the only colony in Wales. In 2004, there were 32,094 AOS, an increase of 16% (1.6% p.a.) since 1994, and 4.6% (0.7% p.a.) since 1999 (Murray 2000). In 2004, breeding was also recorded at St Margaret's Island, Caldey, Pembrokeshire. Since the mid 1990s, Gannets have occasionally been recorded on stacks here, among Great Cormorants *Phalacrocorax carbo*. In 2003, a pair built a nest among Herring Gulls *Larus argentatus*, and in 2004 an egg was laid, though no chick was reared (S. Sutcliffe *in litt*).

England

There were 3,940 AON at Bempton, East Yorkshire, the only colony in England, a 140% increase (9.2% p.a.) since 1994.

Channel Islands

Neither of the Channel Islands gannetries, on Ortac and Les Etacs, was counted in 2003 or 2004. The most recent estimates, in 1999, indicated totals of 2,500 and 3,450 AOS respectively for the two colonies, compared with 2,098 and 3,380 in 1994, increases of 19% (3.6% p.a.) and 2% (0.4% p.a.). Numbers appear to be increasing at both colonies (J. Hooper *in litt.*). Therefore, we used the previous rates of increase to calculate a provisional total population for the Channel Islands of 6,500 AOS in 2004.

Discussion

The survey showed that in 2004 there were 24 gannetries in Britain & Ireland (including the lone pair on St Margaret's Island as a colony), and that the total population was approximately 261,000 AOS. The estimate of 259,000 AOS for the population in 1999 (Wanless & Harris 2004) must now be considered too high, since it was based mainly on the totals for smaller colonies, which were counted during *Seabird 2000*, and the erroneous assumption that the larger colonies, most of which were not counted, had continued to increase at the 1984/85 to 1994/95 rates. Combining the 2004 figures for Britain & Ireland with the latest available counts for other countries (table 2) suggests an east Atlantic population of about 314,000 AOS and a world

Table 2. The most recent estimates (AON/AOS) of the world population of the Northern Gannet *Morus bassanus*.

	Count	Year	% east Atlantic population	% world population	
Britain	225,046*	2003-04	71.7	53.9	This survey
Ireland	36,111	2004	11.5	8.6	This survey
Rouzic, France	17,000	2004	5.4	4.1	Siorat & Bentz (2004)
Norway	4,500	2002-03	1.4	1.1	R. T. Barrett (*in litt.*)
Helgoland, Germany	190	2004	0.1	<0.1	O. Hueppop (*in litt.*)
Iceland	28,536	1999	9.1	6.8	A. Gardarsson (*in litt.*)
Mykines, Faeroe Islands	2,340	1995	0.7	0.6	B. Olsen (*in litt.*)
Russia	35	1998	<0.1	<0.1	J. V. Krasnov per R. T. Barrett (*in litt.*)
Total east Atlantic	313,758		100.0	75.1	
St Lawrence, Canada	79,321	2004		19	G. Chapdelaine/ Canadian Wildlife Service (*in litt.*)
Newfoundland, Canada	24,500	2004		5.7	J. W. Chardine/ Canadian Wildlife Service (*in litt.*)
Total west Atlantic	103,026			24.9	
Total world population	417,579			100	

* includes an estimate of 6,500 AOS for the Channel Islands (see text)

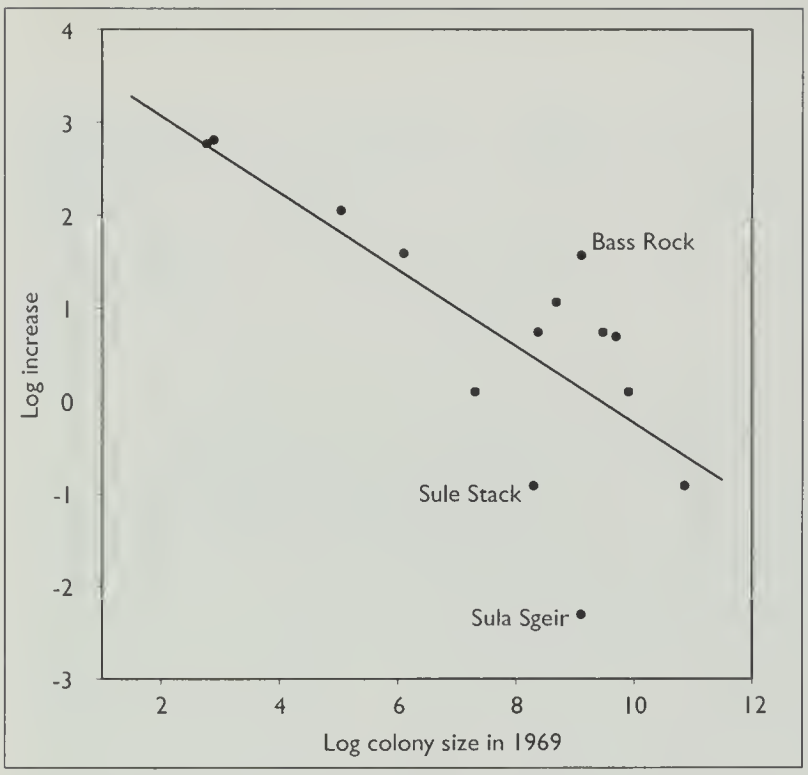


Fig. 3. Log-log plot of the rates of change in numbers of Northern Gannets *Morus bassanus* at British and Irish gannetries between 1969 and 2004, in relation to colony size in 1969. The majority of colonies lie close to the line, indicating density-dependent population regulation. The point representing Sula Sgeir falls well below the line, which suggests a much lower rate of increase than would be expected. In contrast, the point for the Bass Rock lies well above the line, indicating that it has increased at a much faster rate than predicted for its size (see text for details and discussion).

population of about 418,000 AOS, with Britain & Ireland holding 83% and 62.5% of these totals respectively.

Although the British and Irish population of the Gannet increased by 12% since 1994/95, the average rate of increase of 1.2% p.a. was markedly lower than the 2.0% p.a. recorded between 1969/70 and 1984/85 and the 2.2% p.a. recorded between 1984/85 and 1994/95 (Wanless 1987; Lloyd *et al.* 1991; Wanless & Harris 2004). The latest counts of colonies in Norway, the French colony on Rouzic in the Sept-Iles, Normandy, and the German colony on Helgoland (table 2) also suggest that the rates of increase at these colonies, and hence in the whole east Atlantic population, are slowing down.

Two recent studies have investigated how rates of population change at gannetries vary as their population size increases (Lewis



Karen Judd

158. The gannetry on the Noup, Westray, Orkney, was established in 2003 when three pairs of Northern Gannets *Morus bassanus* were reported breeding among Common Guillemots *Uria aalge*. In 2004 the colony had increased to 14 nests and this picture taken in August 2004 shows a group of five nests with chicks.

et al. 2001; Moss *et al.* 2002). New gannetries must obviously be founded by birds that were raised at another colony. After colonisation, numbers typically increase rapidly with much of the initial increase being fuelled by immigration (Nelson 2002). As the colony grows, however, net immigration becomes less important (Moss *et al.* 2002). Comparing the rate at which the number of sites at a colony changes in relation to the size of the colony shows the classic pattern expected if density-dependent competition for some resource is the main factor determining population size (Lewis *et al.* 2001; Moss *et al.* 2002). Hence, when we plot the average rate of change between the counts for the 1969/70 Operation Seafarer survey and the 2003/04 survey of gannetries in Britain & Ireland (fig. 3), we see a significant negative relationship between colony growth rate and colony size.

Most of the gannetries lie relatively close to the line but one colony, Sula Sgeir, stands out as showing a substantial decrease in numbers rather than the increase expected for its size. This is the only colony where harvesting of chicks for human consumption is still permitted. Licence returns indicate that 33,690 young were taken between 1985 and 2001. It seems likely that additional chicks must die through falling off the ledges or being unable to get back to their nests during the intense and prolonged disturbance that must inevitably occur during the hunt (Beatty 1992). An assessment of this kill on the Gannet population on Sula Sgeir is hampered by the lack of any information on breeding success or adult survival at this colony. However, assuming that Gannets on Sula Sgeir have a similar breeding success to those elsewhere in Scotland (0.66-0.78 chicks per pair; Nelson 2002; Mavor *et al.* 2004), the harvest represents about 30% of the annual production of chicks. Moreover, since the licence returns have remained constant, the proportion of chicks harvested will be increasing as the population declines. There are no other obvious colony-specific threats to the



Oscar Merne

159. The top of the main (original) colony on Great Saltee, Co. Wexford, on 8th June 2004 showing where birds have removed the Sea Campion *Silene uniflora* for nest-building.



Oscar Merne

160. Looking down at the Southern Slope colony on Great Saltee, Co. Wexford, on 8th June 2004. The colony extends over the cliff edge. This is where the recent major spread has occurred and there is plenty of room for more pairs.

Gannets of Sula Sgeir so the guga hunt appears to be the most likely cause of the lack of growth of this colony.

The gannetry on Sule Stack has also shown little change during the last 20-30 years, but here there appears to be a shortage of space. In contrast, the Bass Rock colony has increased faster than predicted for its size (4.8% p.a. over the last 35 years), perhaps indicating that conditions for Gannets have been particularly favourable in the North Sea. This increase cannot continue for too much longer, however, as there is now limited room for expansion. The comparison between the Bass Rock and Sula Sgeir is stark: in 1969, the counts differed by only 13 AON, while in 2004 the former had over five times as many AOS as the latter.

In conclusion, results from the 2003/04 survey of Gannets in Britain & Ireland showed that the population continued to increase, but there are signs that the seemingly relentless rise in numbers could be coming to an end. At present, it is unclear how much this is due to the larger colonies being close to their carrying capacity, either because of lack of breeding sites (although this seems unlikely in the case of St Kilda, Ailsa Craig and Grassholm) or because of competition for food during the breeding season. Lewis *et al.* (2001) showed that, theoretically, density-dependent disturbance of fish shoals by diving Gannets was sufficient to significantly reduce feeding success close to the colony, thereby generating appropriate conditions for intraspecific competition for food. To date, the Gannet appears either to have been unaffected by, or even to have benefited from, the changes that have occurred in the seas around Britain & Ireland. However, there is increasing concern that climate change is affecting the east Atlantic ecosystem and causing major changes to the food-web, particularly in the North Sea (Edwards & Richardson 2004; Richardson & Schoeman 2004). While Gannets were one of the few seabirds not to suffer major breeding failure in northern Britain in 2004, it is possible that conditions for them are becoming less favourable. The species could also be adversely affected by changes in discarding practices by fishing vessels (Votier *et al.* 2004). An analysis of Gannet ringing recoveries for Britain & Ireland over the last 40 years found evidence for an increase in adult mortality over the last ten years (Wanless *et al.* in press). The reason for this remains unclear but if adult mortality does increase, then we would expect a negative effect on population size.

The 2003/04 survey indicated that Scotland remains the stronghold of the Gannet, with the largest colony still being on St Kilda. However, numbers there are more or less stable, whereas those on the Bass Rock, the second-largest colony, are currently increasing at 1.9% p.a. If this pattern continues over the next 5-10 years, then the Bass Rock will overtake St Kilda to become the largest east Atlantic colony. Nonetheless, the award for the largest colony in the North Atlantic seems likely soon to be won by Bonaventure Island, Quebec, which had 53,635 pairs in 2004 and had increased by a staggering 45% (7.7% p.a.) since 1999 (Gilles Chapdelaine/Canadian Wildlife Service *in litt.*).

The relentless rise in the numbers of the Gannet is a classic among long-term ornithological studies. In Britain & Ireland there were thought to be around 47,000 nests in the eight known gannetries in 1904 (Fisher & Vevers 1944); by 2004, there were 5-6 times as many occupied nest-sites and three times as many gannetries. The rate of increase now appears to be slowing down. Given the importance of this population in a world context, monitoring future changes and establishing the causes of population change merit a high priority.

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The former status of Great Bustard in Britain

Estlin Waters and David Waters

ABSTRACT The recorded breeding distribution of the Great Bustard *Otis tarda* in Britain, prior to its last nesting in 1832, is presented here. Details are given of the available information on how numerous this species was, and reasons for its extinction in England are discussed. The controversy of whether the British stock was resident or migratory is examined.

This paper examines the evidence concerning the numbers, distribution, reasons for extinction, and migratory status of the former population of the Great Bustard *Otis tarda* in Britain. These subjects have caused much controversy in the past and are of interest (but not critically so) in the light of the present re-establishment project. The 'clouded' early history of the species in Britain, going back to the fourteenth century, was outlined by Gurney (1921) and Southwell (1890). Gurney judged that it was never very common, despite admitting some evidence to the contrary, as it 'required wide extents of open country'. Topsell (1972), writing in the early seventeenth century but not published for over three centuries, gave a surprisingly detailed account, both factual and fanciful, of the bustard, which he himself had seen. His account does not suggest that it was uncommon in England. John Aubrey's text (1969), first published in 1847 but written in the second half of the seventeenth century, says that Salisbury Plain 'abound[s] with hares, fallow deer, partridges, and bustards'. Such indications of large numbers are contradicted by Ray (1678), who suggested that Great Bustards were scarce in Britain, asserting that, because of its wholesomeness 'but chiefly for its rarity, the bustard sells very dear, serving only to furnish princes and great mens [*sic*] tables'. But perhaps the high price simply reflected the difficulty of securing them at that time? Much of the literature on Great Bustards in Britain simply quotes earlier accounts and is often not critical. This paper gives more weight to contemporary accounts by reliable writers who provided sufficient detail.

Former distribution and numbers

In the Palearctic, the Great Bustard increased as forests were cleared and crops became more attractive than the natural steppe (Snow & Perrins 1998). Range expansion probably peaked in the late eighteenth century, a period when many data are available for England. Perhaps surprisingly, the *Handbook* (Witherby *et al.* 1940) does not list all the counties where it formerly bred. Saunders' (1882-84) statement that, up to the time of Henry VIII, it inhabited 'all the undulating plains and wolds from the Bristol Channel to the Firth of Forth' is often quoted. This mention of the Firth of Forth probably depends on Sibbald's 1684 reference to East Lothian but the translation in Gurney (1921) refers only to one having been seen there, rather than to breeding. The earlier Scottish record of Hector Boece or Boethius, the first Principal of the new University of Aberdeen, in his *Scotorum Historia* of 1526, of breeding in the Merse (in the southeast of Berwickshire) sounds convincing. He described these birds as being 'called Gustards in the vulgar tongue, not unlike partridges in the colour of their plumage and their flesh, but which surpass Swans in bulk of body. This bird is rare, and particularly shuns the sight of man' (translation in Evans 1911). Despite this, Bannerman (1962) regarded this species only as a straggler in Britain beyond the English borders. He mentions Boece's record but adds 'but what truth there is in this who can tell'. The species is

Table 1. English counties where the Great Bustard *Otis tarda* is recorded as formerly breeding.

County	Status	Authority
Listed by Kirkman (1912)		
Berkshire	A former resident	Noble 1906
Cambridgeshire	A former breeder	Saunders 1882-84
Dorset	A former resident	Mansel-Pleydell 1888
Hampshire	A former resident	Kelsall & Munn 1905
Hertfordshire	Bred until about 1800	Foster 1914
Lincolnshire	Bred on the Wold	Lorand & Atkin 1989
Norfolk	Breeder in droves of up to 40	Stevenson 1870
Suffolk	Breeder in the breck district	Ticehurst 1932
Sussex	Great numbers on the downs	Walpole-Bond 1938
Wiltshire	Its stronghold in Britain	Smith 1887
Yorkshire	A former resident	Nelson 1907
Not listed by Kirkman (1912)		
Devon	Breeding in 1827	Holloway 1996
Essex	May have nested about 1712	Cox 1984
Kent	May have existed on the North Downs	Harrison 1953
Northamptonshire	Recorded as common at one time	Morris 1855
Northumberland	See text	Bolan 1912
Oxfordshire	Possible former breeder	See text

not mentioned in any of the Acts of the Parliament of Scotland (Baxter & Rintoul 1953).

Kirkman (1912) lists breeding in 11 English counties (table 1) but, in some, the evidence for nesting is vague. Whatever the breeding distribution, and this may well have varied over time and contracted with the bird's decline, almost all accounts record the main areas of population as East Anglia, Wiltshire and Yorkshire. Most early authors concentrate on just one of these areas, which will now be considered in turn.

East Anglia

The East Anglian population was hardly mentioned in writing before the nineteenth century but this region was the last footing of the indigenous population (Saunders 1882-84). At least in the eighteenth and the beginning of the nineteenth centuries, there were three principal flocks or droves in East Anglia (Babington 1884-86). These were (1) the area around Swaffham, especially Westacre, in Norfolk; (2) the area around Thetford, in Norfolk, but stretching south into Suffolk; and (3) the area around Newmarket, partly in Suffolk and partly in Cambridgeshire. Great Bustards may possibly have bred on the coastal sandlings as well but evidence is scant (Piotrowski 2003). Babington claimed that these main droves sometimes intermingled, so records of numbers are far from easy to assess. A count of 27 was made for the Westacre drove in the early nineteenth century and at about this time F. J. Nash remembered seeing '9 flights of bustards in one day' although 'some of these birds were probably seen more than once' (Stevenson 1870). As late as the summer of 1819, 19 were observed together at Westacre (Sheppard & Whitear 1827). In the Thetford drove, the birds shifted their ground from place to place. 'Tradition gives 40 to 30 as the strength of the drove' in the eighteenth century, and there were about the same number at the start of the nineteenth, according to several eyewitnesses examined by Stevenson. For example, in about 1812 and just after harvest, a drove of 40 birds, 'large and small', was seen at Elveden. Stevenson regarded the year of 1812 as perhaps the bustard's 'grand climacteric' – the turning point of its existence in this locality. Thereafter, numbers fell quickly and the last generally accepted successful breeding record was at Thetford Warren (Suffolk) in 1832. A few native bustards, all hens, lingered on for several years, and perhaps as late as 1845 in Norfolk. As numbers declined, it becomes increasingly difficult for us to determine which birds were of indigenous stock and which were likely to be continental immigrants arriving in the winter. Piotrowski (2003) quoted Ticehurst (1932) as stating there were 40-50 in the Icklingham area in 1812 but, in fact, 'about 40' is the highest figure that is mentioned by Ticehurst. The numbers in the Newmarket

drove are less well documented. This drove died out earlier than the other two and, as Newton (1893-96) pointed out, it disappeared without note being taken of the event. Lord Lilford, in Stevenson (1870), considered that more birds occurred in Norfolk than on Salisbury Plain, but the largest group he heard of on the Plain was of 14 (but see below).

Wiltshire

Thomas Pennant (1768) wrote: 'In autumn they are [in Wiltshire] generally found in large turnip fields near the Downs, and in flocks of 50 or more.' George Montagu (1753-1815), one of the eminent ornithologists of his time, was born and spent much of his life in Wiltshire, before moving to Devon in 1798. Montagu (1802, 1813) gave no details of numbers but recorded a rapid decline of Great Bustards in Wiltshire. The history of the Wiltshire birds was given in detail by Smith (1887), yet he also provided little evidence of the numbers involved. Any such details referred to the time that the birds were in steep decline; for example, a group of seven was seen in June or July 1812. Unlike in East Anglia, the number of droves is not given, and even their distribution within Wiltshire is uncertain, but observations came from widely scattered parts of the county. In the seventeenth century, Aubrey (1969) wrote that: 'On Salisbury plaines, especially about Stonehenge, are bustards. They are also in the fields above Lavington: they do not often come to Chalke' (presumably Broad Chalke, 10 km southwest of Salisbury). Probably referring to the late eighteenth century, Smith (1887) implied that the bustard was a prominent dish at the Mayor of Salisbury's inauguration feast and that this was an annual event.

Yorkshire

In Yorkshire, it was described as formerly 'in great numbers on the Wolds of Eastern Yorkshire, when in their virgin state as undulating barren sheepwalks' (Clarke & Roebuck 1881). There are but two published eighteenth-century contemporary allusions to bustards in Yorkshire (Nelson 1907). This is explained, perhaps unconvincingly for such a spectacular species, as being a consequence of the bird's very abundance. The same explanation is also given in the two other standard avifaunas of Yorkshire, Clarke & Roebuck (1881) and Mather (1986); the latter added that, even today, observers rarely report on the common birds. Nelson (1907) records 'broods' of 7 and 12 known to Tunstall and 15 were 'counted' early in the nineteenth century. There is no date for the largest flock mentioned for Yorkshire, of about 25. A gamekeeper is said to have killed 11 at one shoot at Borrow, near Sledmere, in March 1808 (full details in Nelson 1907), which suggests that birds were still plentiful up to then.

Other counties

Of the other counties in England (see table 1), perhaps Sussex had the greatest number of Great Bustards, or at least it is the county best documented. Walpole-Bond, in his monumental *A History of Sussex Birds* (1938), quoted Dr John Hill, writing in 1752: 'I have seen great numbers of them on the downs in Sussex.' Thereafter, there is little indication of numbers, even in Walpole-Bond's detailed account. Indeed, there is controversy about the date when these native birds became extinct; apparently definite statements range from about 1770 to the middle 1820s, a range of over 50 years. Borrer (1891) recorded that they were often hunted with greyhounds by his grandfather, who died at an advanced age in 1844. He generally found them in small parties of 5-10 and sometimes took five or six in a morning, commonly young birds. Borrer's father, while riding on the downs near Patcham about 1810, saw nine birds.

In Berkshire, there is little doubt that the bustard was resident and bred on the open downs, but records are meagre in the extreme (Noble 1906). Nonetheless, observations by Dr Charles Lamb of Newbury, written in about 1814 (though not published until 1880) and covering a quarter of a century, record birds on the Lambourn Downs and seen as late as March 1802 (Standley *et al.* 1996).

Dorset is usually included in the species' former range. J. C. Mansel-Pleydell's *The Birds of Dorsetshire* (1888) states that their downs 'at one time were its favourite haunts' but gives no detail. He quotes an episode from *Anecdotes of Cranbourn Chase* (given in more detail in Dewar 1899) when the Rev. W. Chafin's gun disturbed 25 bustards in 1751 near Winterslow Hut; yet this is in Wiltshire, and Chafin's account of this much-quoted event does not indicate a connection with Cranbourn Chase. This incident is repeated in *The Birds of Hampshire and the Isle of Wight* (Kelsall & Munn 1905), perhaps because Chafin was then living

in Wallop, Hampshire. This book also gives the record of Gilbert White's informer of a flock of 18 in about 1770, on a lonely farm between Andover and Winton. Gilbert White's own records of bustards are disappointingly few but, although he was not a great traveller, he did see them himself on Salisbury Plain and likened them to Fallow Deer *Dama dama* at a distance. His brother, the Rev. Henry White, in his diary of 10th October 1780, recorded 18 on a trip to Stonehenge and Wilton, but did not clarify which side of the Hampshire/Wiltshire border the birds were (Dewar 1899). Clark & Eyre (1993) mention Hampshire flocks of 25 and 12 in the second half of the eighteenth century, but their reference for this is Kelsall & Munn (1905), whose only mention of 25 clearly refers to the 1751 Winterslow Hut sighting, in Wiltshire (above). The largest number recorded in Hampshire therefore remains uncertain.

Farther north, in Hertfordshire, Great Bustards were recorded as breeding in the wilder country near Therfield and Royston up to the end of the eighteenth century (Foster 1914). The species bred on the Lincolnshire Wolds until the early years of the nineteenth century (Yarrell 1841; Lorand & Atkin 1989).

In addition to the estimates given above, there are a few other mentions of large numbers. Morris (1855) recorded winter flocks of up to 50 'or even, it is said, a couple of hundred'. Smith (1887) quoted Graves' volume of 1821 as indicating flocks of 40-50 in various parts of the country. Shrubb's (2003) reference to several hundred in Yorkshire in the latter half of the eighteenth century, and similar numbers in Sussex and in Wiltshire, is presumably based on his general impression from the literature rather than firm numbers.

There are claims of breeding from a number of counties not listed in Kirkman (1912). For example, Holloway (1996) described it breeding widely from Devon to Yorkshire at the end of the eighteenth century. The standard avifaunas of Devon make no statement of breeding and the 'much discussed egg' in the collection of Captain S. T. Stidston, claimed to be from Dartmoor on 2nd June 1827, is not otherwise accepted (Jenks 2004). Early Devon ornithologists regarded the unexplored vastness of Dartmoor as the breeding place for many unlikely species, from Grey Plover *Pluvialis squatarola* to Great Bustard (D'Urban & Mathew 1895). In Essex, the reference to the *Spectator* for 4th March 1712 (Cox 1984) may not suggest good evidence for breeding. The reference is to an advertisement for the rent of the seat of Sir Peter Soame, deceased, at Heyden in Essex, with a gentle hill and 'all game in great plenty, even to the Bustard and Pheasant'. Heyden was transferred from Essex to Cambridgeshire in a boundary reorganisation in 1895, and this may have included this estate. In Kent, a record based on hearsay information, but published in the *Zoologist*, that Great Bustard was 'not uncommon' around Romney Marsh, was doubted by Ticehurst (1909), although he later thought it possible that a drove may have existed on the North Downs in Kent, just as they did on the South Downs in Sussex (Harrison 1953). Morris (1855), not always a reliable source, mentioned an unspecified old history of Northamptonshire which described the bustard as at one time common; the reference for this remains elusive. Bolam (1912) seems to be the only reference to nesting in Northumberland. It is not recorded as a breeding species in the avifaunas of Oxfordshire but a large part of northwest Berkshire was transferred to Oxfordshire in 1974. This area included the edge of the Lambourn Downs, often mentioned as a breeding haunt of bustards, but whether they ever nested north of the present boundary is not clear.

Reasons for extinction

The possible factors that led to extinction in England will now be considered. If these no longer apply, the present reintroduction is more likely to be successful. The earliest British records of the Great Bustard are from the early Holocene (the last 10,000 years; Harrison 1988). General environmental factors (table 2) do not seem particularly important in the bird's demise. When humans first influenced their numbers is unknown. The earliest written records are from King's Lynn, Norfolk, in 1371 (Southwell 1890), and based on the family name of Bustard in Yorkshire from 1391 and *The Boke of Kernynge* (*The Book of Carving*) in 1413 (Gurney 1921). Many early records are of bustards killed by the crossbow for feasts. It is not possible to get any idea of numbers or population trends until the eighteenth century; and it should be remembered that 'different explanations might apply to the same species in different places or circumstances' (Jenkins 2003). The literature suggests a fairly rapid decline in

Table 2. Factors influencing the numbers of Great Bustards *Otis tarda* in England.

General environmental factors

Climate The 'Little Ice Age' lasted from the thirteenth century until about 1850, and reached its peak in the latter half of the seventeenth century.

Food supply This is related to climate and other factors.

Natural predators These include Red Fox *Vulpes vulpes*, raptors (chicks) and corvids (eggs).

Habitat Natural changes.

Human and human-related factors

Crossbow This was probably the main method of killing bustards until the Middle Ages.

Falconry Birds of prey were known to have been flown in England since Saxon times but with what success against bustards?

Dogs Despite denials from several authors, there are many convincing accounts of coursing, both young and adult bustards, with dogs. Feral dogs and sheepdogs were also predators of eggs and chicks.

Agricultural machines In the seventeenth century, drills were developed for sowing and the horse-hoe for weeding, which greatly increased egg losses.

Crop changes Wheat, increased at the expense of rye, and other crops (sainfoin and clover) were planted in the seventeenth century.

Landscape changes Enclosures, tree belts and plantations became increasingly widespread in the seventeenth century. There was a loss of the original down grassland but bustards increasingly nested in crops. The enclosures themselves may not have been as important as many accounts suggest.

Shooting Shooting for sport, ornaments and the pot increased as firearms developed. Legislation was not effective but some individual landowners did provide protection.

Netting Females on nests were sometimes taken with nets.

Gin traps Sometimes caught bustards.

Egg-collecting This was mainly for eating but also for breeding and ornament.

Disturbance This increased as the human population of England increased and especially as the numbers of rural workers grew from about 1750.

numbers at the end of the eighteenth century, with only small numbers surviving into the early 1800s. A statute of 1775 protected this species from 1st March to 1st September, and may indicate that it was then deemed in need of such protection. This statute seems to have been no more effective in protecting the bustard than the earlier Act of Henry VIII. Many of the factors listed in table 2 operated over a long period of time and changed only slowly. Great Bustards are long-lived and survival of about 15 years has been recorded in the wild (Morales & Martin 2002), with age of first breeding at 2-4 years in females and 5-6 years in males. Unless there is high adult mortality, this population decline is likely to be relatively slow. We now consider factors that coincided particularly with the main period of decline, in the second half of the eighteenth century (and the early 1800s in East Anglia).

The eighteenth century was a period of great agricultural change, with the establishment of many enclosures, rotation of crops and planting of tree belts (Shrubb 2003). By 1750, most English farmland was enclosed and there was a large and increasing agricultural labouring class (which did not decline until about 1840). These rural workers were needed to feed the rapidly growing human population (which in England and Wales increased from about 6.2 million in 1750 to some 9.2 million in 1800 and 12.0 million by 1821) and to sustain a profitable export trade in cereals. The loss of common land and the low wages caused considerable rural poverty, reaching the darkest days at the end of the eighteenth century and the beginning of the next. As an eighteenth century rhyme has it:

Hang the man and flog the woman
Who steal the goose from off the Common,
But leave the far worse villain loose
Who steals the Common off the goose

No wonder these labourers took all the eggs and any chicks that they could find. The enclosures have often been blamed as *the* cause for the bustards' decline. Indeed, Nelson (1907) described the Enclosures Act as giving them 'notice to quit'. But Great Bustards do remain,

and even nest, close to tree belts. In the Saratov region of Russia, at least four nests were found recently in a long, narrow field of corn with tree belts only 300 m apart (DW pers. obs.). A clear view of over 1 km on at least three sides (Morales & Martin 2002) is, therefore, not essential. The invention, improvement and increasing use of agricultural implements and the introduction of new crops took place at just the period that bustards were declining. Increasingly, bustards nested for preference in crops rather than in natural grassland. Stevenson (1870) commented that the eggs were nearly always laid in winter-sown corn. This was formerly rye, 'sown broadcast after the old fashion'. Wheat was then substituted for rye and sown with a corn-drill. This allowed weeding between the rows, first performed by children and then by the horse-hoe. 'Thus, every nest made by a Bustard in a wheat field was sure to be discovered' and the eggs taken or destroyed (Saunders 1882-84). The Rev. Richard Lubbock (1798-1876), whose observations are well regarded, wrote to Yarrell (1841): 'The system of weeding out corn in the spring has tended perhaps more than any other cause to the decrease of Bustards; since egg collectors became numerous, a nest is a valuable prize indeed.' The introduction of sainfoin and clover, crops that were cut early, led to further destruction (Nelson 1907). Females were said to be netted on their nests (Ticehurst 1932; Bannerman 1962), although Macpherson (1897) could find no evidence for this within the historical period. Montagu (1802) recorded that eggs were also hatched successfully under domestic hens and wrote that this practice would lead to 'a total extinction in a few years'. The practice of taking young birds alive and fattening them for the table was well known (Macpherson 1897).

Increased human predation on eggs and chicks may, therefore, have been the main cause of the bustards' decline, but shooting, for food, sport, dressing flies and for specimens for cabinets of large houses, was certainly an important factor in the final stages of the extinction. The design of guns gradually improved (Tapper 1992) posing an increasing threat to bustards. Though some landowners protected their birds (Stevenson 1870), others allowed shooting even beyond the boundary of their manors (Nelson 1907). One larder was described as generally having a bustard or two hanging up (Stevenson 1870). Any list of records of bustards in the nineteenth century depends heavily on birds that were shot. Bannerman (1962) blamed one head keeper in Norfolk, the notorious 'otidicide' of Stevenson (1870), as the single individual who was more responsible than any other for hastening the bustards' end in this country: four large guns, trained on a spot where bustards were induced to feed, killed seven at one discharge in about 1812. It is said that other sportsmen in Cambridgeshire used cribs, covered with furze and bramble, moving on four wheels with the aid of ropes, posts and a windlass which would gradually wind the crib until the bustards were within shot (Macpherson 1897). In Yorkshire, the equipment of a wolds keeper included a stalking horse, a coat made of horse hide with the hair outside and a blunderbuss, sometimes so heavy that even the strongest man could not hold it without a



Fig. 1. Displaying male Great Bustard *Otis tarda*, as portrayed by Charles Whymper in Charles Dixon's book *Lost and Vanishing Birds* (John MacQueen, London, 1898).

rest (Nelson 1907). Some travelled great distances to shoot bustards. Lord Lilford recorded a blacksmith at Shrewton, in Wiltshire, who well remembers people coming from London to Salisbury Plain. They would drive around bustards in a cart, in gradually diminishing circles, and a good many were killed in this manner (in Stevenson 1870). As bustards became scarcer, they became more desirable to collectors. Shooting for specimens may have been directed at the fully mature males, which became increasingly scarce in the nineteenth century. As Shrubb (2003) concluded, the nineteenth-century avifaunas made it clear that the decline in bustards was at least partly due to persecution and it is impossible to know whether they might have adapted to high farming as 'they were never given the chance'.

Thus the practice of enclosure was probably not responsible for the extermination of the bustard; instead it was the changes in agricultural practice, the bustards' increasing habit of nesting in crops, and the increase in numbers of agricultural workers, all of which resulted in increased human predation (Dixon 1898; Shrubb 2003). Nonetheless, some parts of the downs and wolds have always remained open (Shrubb 2003). In the later stages of the bustards' demise, shooting, especially of mature males, probably hastened the extinction. These factors either do not operate today or can be modified to the advantage of the birds. This gives support to the present reintroduction on Salisbury Plain.

Migratory status

The first *List of British Birds* (BOU 1883) described the Great Bustard as formerly resident (found throughout the year), while the sixth edition (BOU 1992) simply described it as a former breeder, without categorising it as either a resident or migrant, thus following Witherby *et al.* (1940), Snow (1971) and Cramp & Simmons (1980). Professor Alfred Newton (Newton 1893-96) was particularly interested in the Great Bustard and wrote that 'not many birds have had more written about them' but that much uncertainty remained. One uncertainty was whether the British stock was migratory or not. For Newton, this was a moot point 'which will most likely always remain undecided'. Thus some claim that it was resident in Britain while others (and, as John Walpole-Bond wrote in 1938, in 'high quarters, too') contend that it came to Britain only to breed.

It is important to distinguish between 'true migration' and other, less regular forms of bird movement. True migration occurs at predictable times of the year, between breeding and non-breeding areas, and involves movements in specific directions. As Evans (1985) pointed out, it places emphasis on populations and produces a change in the geographical centre of the population. In connection with the Great Bustard in Britain, the question is whether birds migrated regularly (leaving the country), as they do in the eastern parts of their range (Morales & Martin 2002) – though even here the trigger for movement is usually snow cover rather than frost and low temperatures. Considering the East Anglian population first, an interesting footnote by Thomas Southwell in Browne (1902) stated that a manuscript, dated 1605, gives a 'Monthlie Table for a Dietorie' where the bustard is mentioned as in season from October to May. Even when bustards were becoming scarce in Norfolk, a letter dated 28th April 1824 was sent by Robert Hammond to P. J. Selby offering to show him bustards if he paid him a visit; Hammond added 'I am certain in winter, if not in summer' (Southwell 1890). Of course, bustards in winter could have been migrants from the continent, which then held a larger population, although Southwell (1890) pointed out that it had not then been shown that it was common for bustards to visit England in midwinter. Selby (1833) believed the species to frequent its native haunts through the whole year, except in deep snow, when it sought more shelter or coastal areas. Further evidence for its status as a resident was given by Mudie (1834), who observed that in Norfolk they frequent large cornfields in summer and turnip grounds in winter, moving nearer the coast and sometimes forming small flocks if the weather is particularly severe. In contrast, Stevenson (1870), one of the best chroniclers of the Great Bustard in Britain, describes the males as 'at any rate, partial migrants'; they disappeared at the end of spring and the beginning of summer. Less certain were the movements of the females, but these seemed to disappear from the time of the harvest to the beginning of the new year. Perhaps the strongest evidence that the East Anglian birds at least embarked upon some sort of migration is given in Ticehurst (1932), based at least partly on Newton. The males disappeared early in the summer; the females with

young gathered in a flock, after the rye was cut, for 4-6 weeks, before they too disappeared. The herd reappeared in January, frequenting turnip fields (Ticehurst 1932). Newton considered that they may have visited the fens in the intervening time but Ticehurst admits that there was no definite information on this. He wrote: 'it is quite certain that Bustards were rare in September and were never seen in their haunts during the next three months. It seems, however, much more probable that the Bustard was migratory and left the country altogether.' In Babington (1884-86) there is a footnote that 'Mr. J. H. Gurney jun. considers that there can be hardly any doubt that the bustard, commonly spoken of as a resident in East Anglia, left England for the south as soon as the nesting season was over, i.e. in September.'

In contrast with these views of migration, which seem to apply only to the East Anglian birds, Thomas Pennant (1768), one of the best known of eighteenth-century British zoologists and a correspondent of Gilbert White, wrote: 'they keep near their old haunts, seldom wandering above 20 or 30 miles'. In a separate section at the end of the appendix on birds, Pennant recorded that the bustard 'inhabits our downs and their neighbourhood all the year'. Gilbert White documented sightings of bustards on Salisbury Plain on 13th February 1770 (Johnson 1931). Although these might have been immigrants from the continent, Southwell (1890) pointed out that such immigrants occur most often away from the ancient haunts of native birds, which is not surprising when the limited extent of their breeding haunts is compared with the rest of the country. George Montagu knew the bird well from his time in Wiltshire, and believed that 'The bustard is not properly migratory with us; it only leaves its usual haunts in very severe winters, when the downs are covered with snow for some time; pressed by hunger it repairs to more enclosed and sheltered situations in small flocks, and even strays to a great distance' (Montagu 1802). As an example of this, he mentioned a bird killed near Plymouth and others in Devon. These too may, of course, have been immigrants from the continent, but either way, as Montagu put it, 'these occasional migrations always prove fatal'.

Discussion

The available evidence does not enable us to give an accurate estimate of the population of Great Bustards at any time during their existence as a breeding species in Britain. A review of the literature serves only to emphasise how little value even such extreme terms as 'common' and 'rare' have; it depends on what they are being compared with. Some of the evidence for the scarcity of bustards is the high price they fetched. But this may have been related to the difficulty of obtaining the birds before modern guns were available. To support this, costs of other game were also high; Bourne (2003) gives sixteenth-century prices as 20-72 old pennies for a bustard compared with 24-80 for Common Crane *Grus grus* and 36-96 for domesticated swans. An earlier manuscript gave one bustard as broadly equal to four [Grey] Partridges *Perdix perdix*, two [Common] Pheasants *Phasianus colchicus* or a lamb (Harrison 1953). Another reason put forward for rarity was the lack of open habitat that they were thought to require. But this requirement seems to have been exaggerated, since bustards are not confined to wide open spaces and even occur in open oak *Quercus* woodland and olive groves in Iberia (Morales & Martin 2002). Most counts date from the period when the bird was probably already in decline. Flocks of much over 50 do not seem to have been noted but perhaps such numbers were simply not counted then. Population estimates are not possible as, in most areas, we do not know how many flocks there were. Smaller numbers occurred in other suitable habitats but, away from the traditional areas, the bird was probably something of a rarity and wanderers were often killed. These scattered records, which fill much of the literature about this species in county avifaunas, may have been of British stock, but increasingly during the nineteenth century are likely to have been of continental origin. Indeed, it has been suggested that England received additions to its breeding numbers from the plains of Germany (Macpherson 1897). While it is possible that some migrants may have stayed to breed, it is now known that females usually return to their natal site to breed (Morales & Martin 2002). We may conclude that, in the eighteenth century, the centres of the population were on Salisbury Plain (together with the Hampshire and Sussex downs), in East Anglia, and in Yorkshire (with Lincolnshire). Great Bustards were then probably breeding in 11 counties in England, and possibly in a few others (table 1). Their fragmented range therefore extended over some

400 km, probably with little interchange between the separate populations. This suggests a sizeable total population in England. Extinction came fairly suddenly, the main decline occurring in less than 30 years, probably as a result of increased predation by humans on eggs, chicks and adult birds.

In East Anglia, the migratory pattern of the bustard seems uncertain. It is not possible to distinguish local movements, perhaps undertaken regularly on a seasonal basis, from irregular cold-weather or food-seeking dispersal. Such local movements were perhaps not then fully understood. For example, Lord Lilford thought that the main body of bustards arrive in Spain early in March (Stevenson 1870): 'The greater number leave Spain [in] about October, though a good many always remain in Andalusia during the winter.' Most, if not all, Spanish birds are now known to remain in Spain throughout the year. The clear and repeated evidence of Pennant, probably from Wiltshire and nearby, is that bustards do not migrate any great distance, while Montagu clearly believed that the bird was 'not properly migratory with us' (Montagu 1813). Such definite and detailed statements from these two distinguished and contemporary authorities should surely be accepted. The Wiltshire bustards, at least, were generally resident.

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Appendix 1. Update on the Salisbury Plain reintroduction project

The first release of Russian-born Great Bustards on Salisbury Plain occurred in 2004. In August, 28 bustard chicks were imported; four were lost during the quarantine process, and two more were injured and could not be released. However, the remaining 22 (20 of which were fitted with radio transmitters) were released in September, into a 4-acre pen with no roof netting, so that the bustards could fly out if they wanted to. The pen had been planted out with various crops to which Great Bustards are partial, including several varieties of kale, lucerne and tic beans. Initially, most of the birds remained in the pen and grazed continually. One male (Dudley) – inevitably one of the two birds without a transmitter – left the pen on 18th September and has never returned. Eventually, reports were received that he was living with a group of partridges nearby; Dudley is



David Waters



David Waters

162 & 163. Great Bustard *Otis tarda* chicks in Russia, being prepared for translocation to the UK. The chicks are fed by a 'bustard glove puppet' for around two weeks, until they can fend for themselves. The goose decoys covered in fur were used as the chicks' 'mother figure' and these were also placed in the quarantine pens in Britain for continuity.

seen quite often and continues to do well.

At the time of writing (early May 2005), there are nine of the 22 birds remaining. The main causes of mortality have been predation by Red Foxes *Vulpes vulpes* and impact injuries. The foxes are dealt with on a weekly basis, but the collisions with fences have been more of a problem than anticipated. Inevitably, there has been a steep learning curve in this first year but, having learnt a lot about potential problems in year one, better results are anticipated in year two. For example, many of the problem fences have been removed and those which simply cannot be removed have been marked so that they are much more visible to the birds. One of the problems could relate to the birds' binocular vision, and also to the fact that their pen has been built on undulating ground. Since most of the casualties had radio transmitters attached to them, the bodies were retrieved and analysed in all cases, and it was found that the birds had been in good condition, having clearly fed well, which is encouraging.

The young bustards fly out of the pen quite frequently and the females, being so much lighter than the males, are particularly spectacular. Radio-tracking has shown movements of up to 10 km from the release pen. A further 40 chicks are scheduled to arrive from Russia this September, and the Great Bustard Group has a trial licence to import the birds annually for ten years.



David Kjaer



David Kjaer



David Kjaer

164-166. Juvenile Great Bustards *Otis tarda*, part of the first phase of the current reintroduction scheme on Salisbury Plain, autumn 2004. All of the birds were fitted with individually recognisable patagial tags, and most of them were also radio-tagged.

Black Lark:

new to Britain

Lance Degnan and Ken Croft

ABSTRACT There can be few birds on the British List with such a chequered history as Black Lark *Melanocorypha yeltoniensis*. It was first admitted to the British List when a male was reportedly shot at Pevensey Levels, Sussex, on 29th January 1907, but this and several subsequent records were removed following a review which concluded that they formed part of the 'Hastings Rarities'. In this account, two recent occurrences of Black Lark, the first acceptable records for Britain, are documented. The first of these was at Spurn, East Yorkshire, on 27th April 1984, and it was only after a remarkable series of coincidences that this bird was finally accepted as a 'first' for Britain. The second individual, at South Stack, Anglesey, from 1st to 8th June 2003, became one of the most celebrated rarities ever to appear in Britain.

The Spurn bird

Following three days of light easterly winds with clear conditions at Spurn, East Yorkshire, the afternoon of 26th April 1984 brought a freshening northeasterly wind with associated low cloud and sea fret. On 27th April, a cold, light northeasterly breeze with thick sea fog persisted for most of the day, until the sun finally broke through at 19.00 hrs, leaving clear conditions for the remainder of the evening. A thin scattering of grounded migrants had been seen during the week, including small numbers of Northern Wheatears *Oenanthe oenanthe*, a few thrushes *Turdus*, one or two Black Redstarts *Phoenicurus ochruros* and a Whinchat *Saxicola rubetra*.

At 08.45 hrs on 27th April, Nick Bell (NAB) found an unusual passerine feeding on the short turf of the Parade Ground at the Point which he was unable to identify. He returned with B. R. Spence (BRS) and G. Thomas, who were equally puzzled by its identity. A single-panel mist-net was erected in order to attempt to catch and establish the bird's identity but, unfortunately, this proved unsuccessful. After flying over the net on the first attempt, the bird returned and, after a short wait, it was once again ushered towards the net. This time it flew above the net and kept going, flying over the nearby Heligoland trap, out across the Humber estuary and on towards Lincolnshire. It was never seen again.

The remarkable plumage and confiding nature of the bird led the observers to believe that it must be an escaped cagebird, albeit an unusual one. Although various books on cagebirds were consulted at the time, the observers were unable to put a name to the bird. The general size and gait reminded NAB of a cowbird *Molothrus*, although clearly not one with which he was familiar. Nonetheless, after considering the options available, the observers decided that it must be an escape from captivity, perhaps a species of cowbird from Central or South America, or one of the African weavers (Ploceidae).

The bird was described briefly in a short note in the Spurn Bird Observatory (SBO) log, but this made no mention of the only other birder to see the bird, Alex Cruickshanks (AC), who had watched the attempts to trap it from afar. To his credit, AC did suggest that the bird could be a Black Lark *Melanocorypha yeltoniensis*, a suggestion that did not find favour with the more experienced NAB and BRS at the time. Sadly, the bird was dismissed and quickly forgotten, with the details hidden away in the depths of the SBO log.

In the early 1990s, NAB saw the plate of Black Lark in Volume 5 of *BWP*, and this

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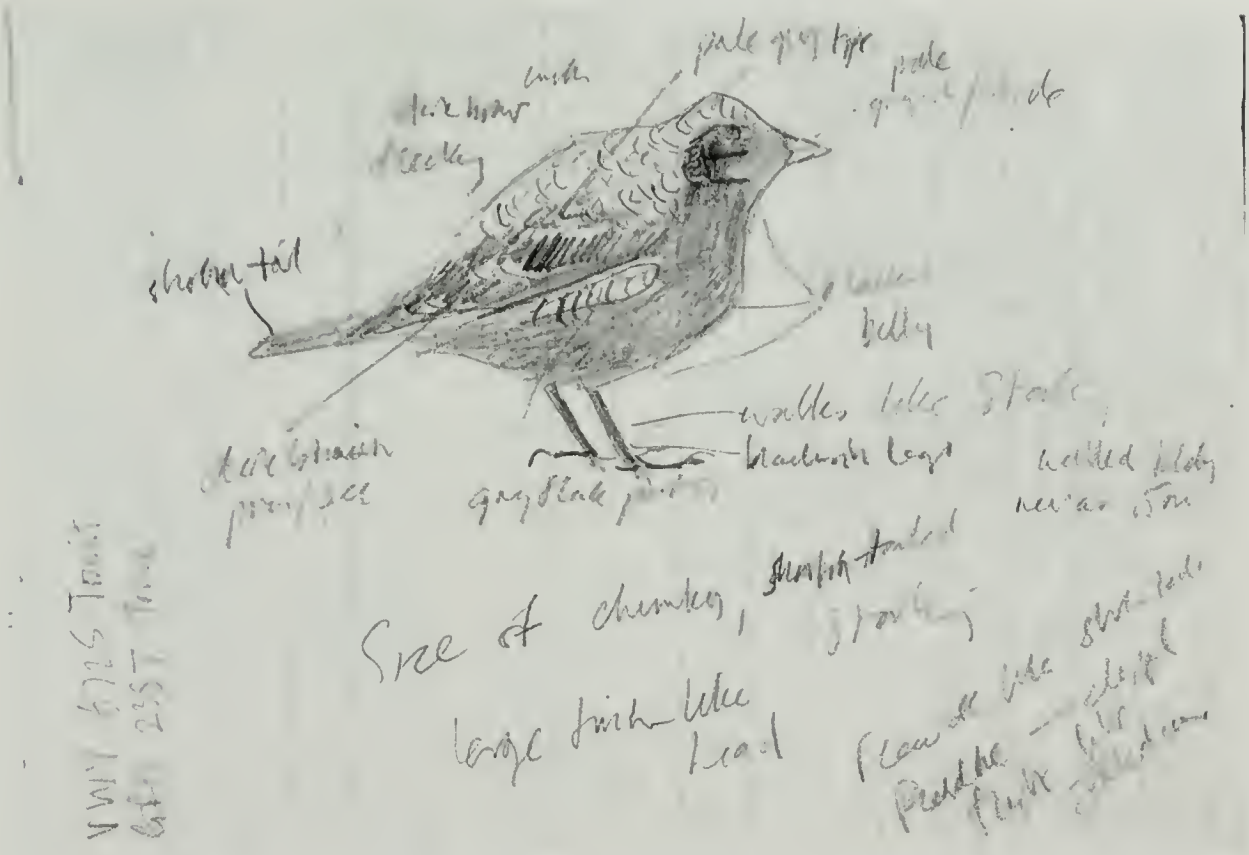


Fig. 1. Field sketch and notes of Britain's first Black Lark *Melanocorypha yeltoniensis*, at Spurn, East Yorkshire, on 27th April 1984, by the late Nick Bell.

revived old memories of the mystery bird at Spurn. Unfortunately, he was unable to find his old notebook which contained his notes of the bird, and it was not until 1996 that this was discovered in the attic of his mother's house in Hull, East Yorkshire. The notebook included a description and sketch of the bird (fig.1). At about the same time, NAB also became aware of a photograph of a Black Lark that had occurred recently in Sweden, and it was at this point that NAB and BRS realised that they had probably made an error. Regrettably, BRS had, by this time, discarded his old notebook with details of the bird. With only one source of evidence, the record was thought unlikely to find favour with BBRC, so, despite an initial rush of renewed enthusiasm, interest in the sighting was once again destined to languish.

Nothing further happened with the record until early in 2000. At that time, the old SBO logs were retained by John Cudworth, chairman of SBO, but following his retirement in 1999, they were transferred back to Spurn. Intrigued by NAB's tale, Dave Boyle, then SBO warden, looked back through the old logs and rediscovered the account of the mysterious 'escaped' passerine (fig. 2). He was surprised to discover that the nightly log for 27th April 1984 had been written by NAB himself, an action that he had long since forgotten about! With two primary sources of information now available, and with further encouragement from Spurn regulars, NAB once again retrieved his old notebook and this, coupled with the account in the SBO log, formed the basis of a formal submission to BBRC in spring 2000.

Description

The following notes were taken, based largely on NAB's sketch and handwritten notes, as the observers watched the bird at ranges down to 15 m.

It was a large, plump passerine, a little larger than a Common Starling *Sturnus vulgaris*, but strikingly marked and quite purposeful in its actions. In size, it was similar to a chunky, short-tailed Starling, but with a large, finch-like head. Its actions as it walked and ran around on the short grass were also reminiscent of those of a Starling.

Throat, breast, belly and remainder of underparts were black, with a panel of greyish-white feathering along the flanks below the closed wing. Crown, nape and mantle to uppertail-coverts were pale grey, with some dark brown edgings to the mantle feathers. Wings blackish with dark brown primaries. Tail blackish, short and forked. Legs blackish with 'trouser' feathering.

One of the most distinctive features was the large, finch-like bill, which was pale ivory in colour and of

April 27th 1984.

Observers : B.R.Spence, G. Thomas, N.A.Bell, P. Baglee, S.P. Smithurst.
A Marshall arrived at 1000hrs

Activities : Whole of recording area covered.

Weather : Thick sea fog with cold NE wind until 1900h when sun broke through to give a clear late evening.

Ringing 4: 1 Robin, 1 Dunnock, 2 Starlings

Migration : Only visible passage noted were 4 Rooks ↓, 4 Sand Martins ↓, 20 Swallows ↓, 1 House Martin ↓, 2 Pipits ↓, & 6 Goldfinches ↓
Grounded migrants noted were 1 Cuckoo (Big Hedge), 40 Swallows (C2), 1 Tree Pipit (Point), 1 Pied Wagtail (Point), 2 Whinchats (1 N 1 Δ), 5 Wheatears (3 Δ 1 N 1 P), 4 Fieldfares (1 Δ 3 WO), 3 Redwings (Δ), 3 Phylloscs (1 Δ, 1 BB, 1 C2), 1 Chiffchaff (Δ), 2 Willow Warblers (1 C2, 1 P), 2 Goldcrests (C2), 4 Jays (1 MC).

Waders : Apart from 1♀ Ruff (Scrape) and 5 Whimbrels (3 W 2 P), a good number of Bar-tailed Godwits were seen to leave to the east in the early evening: a total of 230 were noted in parties of 50, 50, 60 & 70. (c 60% birds in summer plumage)

Sea birds : A Fulmar was over the Humber and 3 ↓ at sea; 1 Kittiwake ↓, 8 Sandwich Terns (2 H 6 offshore) & 2 Little Terns over Bluebell.

Wildfowl : On the Humber were 5 Brent Geese, 48 Shelducks, 8 Mallard and c30 Common Scoter.

General : A ♂ Kestrel in the Δ, 2 Red-legged Partridges in Clubley's (one bird calling from roof of sea-watching hut!) 2 Grey Partridges in Clubley's, 1♀ Pheasant at Wire Dump, 4 Ringed Plovers (2 Δ 2 Iron Gates), 1 Snipe (C2), 14 Blackbirds (6 Δ, 1 Big Hedge, 2 W, 1 C2, 3 CB, 1 P), 4 Song Thrushes (3 Δ 1 Warren), 1 ♂ Chaffinch (Point), 1 Goldfinch (C2).

Escape : At 0845h a bird was found feeding on the Parade Ground at the Point of a species unknown to BRS, NAB & GT.

General 'jizz' was of a chunky lark or bunting, almost Blackbird in size with shorter tail: its general gait reminded NAB of Cowbird: throat, breast, belly & rest of underparts were slaty-black with a paler of greyish-white along flanks below closed wing: crown, nape & mantle were pale grey down to upper tail coverts, with some dark brown edgings to mantle feathers: wings blackish with very dark brown primaries: tail blackish & forked: eye dark: bill off-white and of Corn Bunting proportions: legs blackish with 'trouser' feathers: no call: in flight, wings were of ample proportions and BRS thought them to be pointed, almost lark-like: when flying away it gave the impression of Fieldfare: it remained feeding, presumably seeds and a worm (GT), on the Parade Ground but though mist nets were erected, it was wary of them and attempts to catch the bird were unsuccessful

Avocet Yesterday's bird was found roosting on the Humber shore at 1700h, just south of the Warren: it was last seen at 1800h

April 28th 1984

Observers B R Spence, G. Thomas, N A Bell, L Degman, M. Coverdale, A. Marshall, M Lambert, S Griffiths, G. Wilson, J. Greenwood, S Nicholson, R. Stark, M. Hackney, A Cooper, P Took

activities Sea watches at the Warren 0610-0640hrs and 1450-1920hrs Whole of recording area covered

Weather. almost cloudless until ca 1245 when low cloud/mist came in reducing visibility to ca 1 mile The mist lifted to some extent mid-afternoon, leaving the rest of the

Fig. 2. Pages from the logbook at Spurn Bird Observatory, East Yorkshire, for 27th April 1984. The account, by the late Nick Bell, describes a mystery bird seen at the Parade Ground, and unpromisingly labelled as an 'Escape'. As described in the text, this was eventually accepted as Britain's first Black Lark *Melanocorypha yeltoniensis*.

similar proportions to that of Corn Bunting *Emberiza calandra*.

No call was heard.

In flight, NAB noted the wing action to be unusual, the ample wings being broad yet pointed, and the flight was quite clipped, reminiscent of that of Fieldfare *Turdus pilaris* or Western Jackdaw *Corvus monedula*. The bird was noted to hover before landing. BRS considered the wings to be pointed and almost lark-like.

Assessment by BBRC

During the first circulation, BBRC asked for more details, but there seemed to be little likelihood of achieving this. Serendipitously, a chance conversation between NAB and AC, who was visiting Spurn in late May 2000, led to AC submitting his own independent notes from 1984, which were added to the BBRC file. The events and circumstances of the occurrence were now corroborated by a second, independent, source, and also benefited from some additional notes supplied by BRS. Together, these notes confirmed the distinctive appearance of the bird, as well as its approachability and the prevailing misty conditions. They also established that the confusion over the bird's identity was caused largely by broad grey fringes to the mantle and head feathering, creating an impression quite different from that expected of Black Lark.

During circulation, all likely confusion species were discussed. The four most likely species were considered to be Shiny Cowbird *Molothrus bonariensis*, Bronzed Cowbird *M. aeneus*, Lark Bunting *Calamospiza melanocorys* and White-billed Buffalo Weaver *Bubalornis albirostris*. The first two have entirely dark bills, are long-tailed, and apparently never show such pale tips to the plumage. Lark Bunting also has a dark bill, but displays a white patch on the wing similar to that of Snow Bunting *Plectrophenax nivalis*. White-billed Buffalo Weaver shows greater resemblance to Black Lark, with a deep-based, white bill and largely black plumage, apart from diffuse greyish-white patches on the flanks. The sketches rule out these possibilities, leaving Black Lark as the only species to match the features shown by the mystery bird.

Acknowledgments

Without the support of Nick Bell, who generously shared the details of this record with many Spurn regulars, including myself, this record is unlikely ever to have been accepted. Sadly, Nick died in 2001 and was unable to enjoy the formal acceptance of his Black Lark as the first for Britain. My thanks also go to Barry Spence and Pete Crowther for their help in pulling the details together.

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The South Stack bird

The days leading up to 1st June 2003 had been warm and settled across North Wales, with light east to southeasterly winds and frequent sea mist resulting in reduced visibility. Although the winds were coming from a promising direction, they had produced little of interest at my local patch, South Stack, on Holy Island, Anglesey, other than a large movement of Collared Doves *Streptopelia decaocto* and a single Turtle Dove *S. turtur*. I ventured out again on the morning of the 1st, still hopeful of finding some good migrants, but by early afternoon I had not found anything of note, so I decided to go home to watch some sport on television. I was well settled when the telephone rang. It was Dave Bateson (DB), one of the RSPB wardens at South Stack, who told me that earlier that morning a volunteer warden, Stephen Rosser, had seen an unusual bird which he could not identify. As DB had been working away from his office, he had not heard about the mystery bird until his return, and although he had had a quick look for it, he was unable to refind it. It sounded sufficiently interesting for him to ask me if I would try to relocate and identify the bird.

I arrived at South Stack at about 16.00 hrs and walked the area where the bird had been seen but, like DB, I was unable to find it. I returned to the car park and was showing a visiting birder a pair of Red-billed Choughs *Pyrrhocorax pyrrhocorax*, when I noticed a dumpy, short-tailed, black bird flying out of a grassy field bordering the reserve. It flew low across the heath and appeared to land near the cliff edge. I do not remember what I said to the visitor as I left him standing there, and quickly made my way across the heath. Initially, I did not see anything, but as I walked slowly onto the clifftop path, a male Black Lark suddenly ran out in front of me!



Nigel Blake

167. Male Black Lark *Melanocorypha yeltoniensis*, South Stack, Anglesey, June 2003.

Scarcely believing my own eyes, I gradually got my breath back as I watched yet another amazing bird on my local patch (following the Grey Catbird of October 2001; see *Brit. Birds* 97: 630-632). It then flew back towards the grassy field and landed on the wall but, thankfully, dropped back down onto the path instead of into the field. It was now 16.50 hrs. With nobody around and the bird apparently settled in an area sufficiently far from the main tourist paths not to be disturbed, I decided to make a run for the RSPB office. Fortunately, DB was still there. I told him the news, picked him up off the floor, and telephoned the news out.

I returned with DB and we quickly relocated the bird, feeding happily on the path. Local birders began arriving shortly afterwards and soon a steady stream of visitors appeared and all enjoyed outstanding views until dusk. The following morning, with birders massed in the car park before dawn, the bird was quickly relocated and, thanks to excellent crowd control by Alan Davies and DB, was seen well by all. It continued to give excellent views to an estimated 4,000 admirers over the following week and was last seen on the evening of 8th June.

Ken Croft
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Description

A large, dumpy lark with long wings that reached almost to the tail tip. Head relatively large, rounded and black, but with scattered narrow and indistinct greyish-white fringes. Mantle and scapulars showed slightly more conspicuous, but still narrow and fairly indistinct, greyish-white fringes. Rump much paler, appearing greyish-white and mottled, although this area was usually hidden by the long wings. Underparts black and unmarked. Tertials and primary tips showed narrow white tips. Primaries and secondaries distinctly browner than body contour plumage and appeared abraded. Bill conical in shape, pale ivory-white. Legs dark brownish.

Ageing

Both adult and juvenile Black Larks undergo a complete moult in the summer, between July and October, although juveniles can retain outer primaries as late as December (Svensson 1992). Following this moult, age classes become inseparable. Although the Anglesey bird showed obviously worn and faded primaries, which appeared browner than the body, these cannot be used to establish the age of this individual.

Range

The range of Black Lark is restricted to the grassy steppes of Central Asia, with most breeding in Kazakhstan, although some also breed around the northern shores of the Caspian Sea to the Lower Volga area of south-eastern Russia. It breeds in areas of high salinity with wormwood *Artemisia* and feather-grass *Stipa*, between the 22°C and 25°C July isotherms (Hagemeijer & Blair 1997). After the breeding season, most remain in the breeding areas, where they form large, nomadic flocks, although females and young birds are believed to move farther than the adult males (Lindroos & Tenovuo 2002). A part of the population moves a short distance to the west or southwest in September and October, with some wintering in the Ukraine and southeastern regions of European Russia (Lindroos & Tenovuo 2002) but their appearance farther west is exceptional.

Although still numerous on the steppes of central Kazakhstan, the range of Black Lark is believed to be decreasing, owing to the original grasslands being ploughed and taken into agricultural use.

Previous occurrences within Europe

Black Lark has been recorded in Europe on just 18 previous occasions, with six of these being more than 100 years ago. The large and increasing number of active birdwatchers in Europe in recent years has not resulted in a corresponding increase in the numbers being found, and Black Lark remains a real rarity. All European records between 1958 and 2003 are listed below.

1958: A male at Athens, Greece, 20th April
1961: One at Manfredonia, Puglia, Italy, 3rd May
1963: A flock of eight at Lake Koronia, Greece, 20th February
1964: Two at the Axios Delta, Greece, 8th February
1981: A male at Zakupy, Czech Republic, 28th November
1988: One at Kosienice, Poland, 17th January
1989: A male at Joensuu, Finland, 24th March
1989: A male at Korppoo, Finland, 8th April
1993: A male at Karlstad, Värmland, Sweden, 6th-7th May
1995: A female at Cape Kaliakra, Bulgaria, 25th May

Unlike the vast majority of Asian vagrants to Europe, which tend to appear in autumn, all but one of the recent Black Lark records has occurred between January and early June (fig. 3), suggesting that Black Lark is prone to

168. Some of the massed ranks enjoying watching Britain's second Black Lark *Melanocorypha yeltoniensis*, South Stack, Anglesey, June 2003. *Steve Young*/Birdwatch



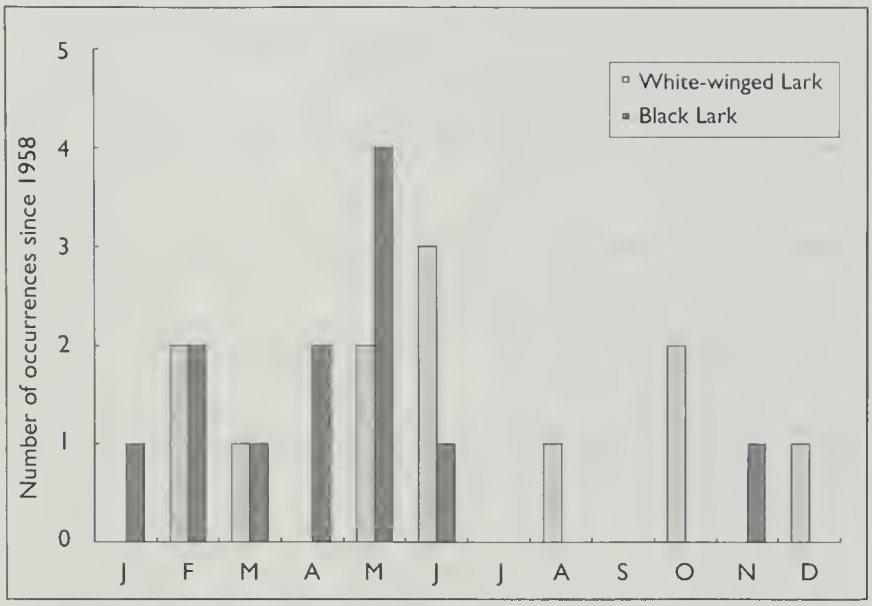


Fig. 3. Temporal distribution of records of Black Lark *Melanocorypha yeltoniensis* and White-winged Lark *M. leucoptera* (a species closely related to Black Lark and with a similar range) in Europe, 1958-2003. As some records of Black Lark involve flocks of two or more individuals, this chart presents the number of occurrences, rather than individuals, of the two species, to maintain an accurate picture of temporal occurrence in Europe.

westward vagrancy during the first half of the year.

Black Larks and the Hastings Rarities

During the period between 1903 and 1916, the first British records of 32 species, including several Black Larks, were recorded within a 20-mile radius of Hastings. In their analysis of these records, known as the 'Hastings Rarities', Nicholson & Ferguson-Lees (1962) summarised the available evidence and concluded that many of these claims were fraudulent. Consequently, they removed 542 specimen records from the list of accepted records, along with a further 52 sight records from the same area. These included all the records of Black Lark listed below:

1907: A male shot at Pevensey Levels, Sussex, 29th January. One male and two females also seen.
1907: A female shot near Lydd, Kent, 31st January. One male and two females also seen.
1907: A male and two females at Rye, Sussex, 16th February. One male shot.
1907: A male shot near Lydd, Kent, 18th February
1915: A male seen at Hollington, St Leonards, undated January
1915: A female shot at Westfield, Sussex, 30th January
1915: A female shot at Westfield, Sussex, 1st February

Since these were the only British records at the time, Black Lark was removed from the British List, and it was readmitted only in 2004, once the Spurn bird was accepted.

Possible causes of European vagrancy

Since Black Lark is largely resident or dispersive within Central Asia, its appearance in Europe seems unlikely to be influenced by those factors that bring overshooting migrants into Europe each spring. Koistinen (2002) compared the European records of Black Lark and White-winged Lark *Melanocorypha leucoptera*, a closely related and largely resident species that shares similar breeding and wintering ranges to Black Lark, to determine whether there was any correlation between their appearances. He established that there was just one occasion when the species strayed simultaneously to Europe. This occurred in May 1993, when a Black Lark in Sweden on 6th-7th May coincided with a White-winged Lark in Poland on 12th May. Examination of the temporal distribution of records of these two species in Europe (fig. 3) demonstrates that both show a tendency to appear in late winter and spring, and this is more marked in Black Lark than in White-winged Lark. Koistinen also examined the prevailing weather conditions during the periods preceding the discovery of Black Larks during 1980-95. Of these birds, the two Finnish records in 1989 followed a period of east to southeasterly winds in March and April which had originated over southeast Russia. Similarly, the Swedish bird in May 1993 turned up after a period of favourable weather. The weather conditions associated with the other records appeared unsuitable for recent vagrancy from the wintering or breeding areas.

If the appearance of Black Larks in Europe does not follow the established pattern for spring vagrancy of migrant species into Europe, what other factors might be at work? Koistinen suggested that extreme weather conditions in the normal wintering areas, in particular thick

snow cover, could prevent foraging. It is possible that under such conditions, birds may disperse to seek alternative feeding areas. Such birds may then wander, with some reaching Europe. But, with its strong tendency to form single-sex flocks outside the breeding season, it does seem unusual that most recent records refer to single males. This could, however, in part explain why most European records refer to males. Being largely resident, they may be more likely to encounter occasional extensive snow cover, forcing them to disperse beyond their normal range. In contrast, the flocks of females, which typically disperse farther than adult males in winter, may be better adapted to seeking out improved feeding areas, so that their tendency to vagrancy is reduced.

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EDITORIAL COMMENT Colin Bradshaw, Chairman of the British Birds Rarities Committee, commented: 'The journey of Black Lark onto the British List has surely been one of the most tortuous of any species. While the original descriptions of the Spurn bird were quite good, BBRC was surprised that the observers had dismissed the bird, given that male Black Lark is relatively easy to identify and that there was contemporary literature available describing the variation in plumage characters that was causing concern. The additional notes provided by a completely independent observer showed that he had identified it as Black Lark at the time, but had subsequently been dissuaded from pursuing this further following discussion with what he believed to be more knowledgeable observers. In hindsight, he was correct and it was this identification, combined with the circumstances and descriptions provided, that swayed our judgement to accept the record. Several members of BBRC and BOURC visited Kazakhstan in 2002, which allowed us to become better acquainted with the variation in spring plumage of male Black Lark, and provided first-hand evidence that the plumage described for the Spurn bird was the norm rather than an unusual variation. In a record littered with coincidences, perhaps the most remarkable of all was that BBRC finally accepted the first Black Lark for Britain just one week before the South Stack individual was found.'

Eric Meek, Chairman of the British Ornithologists' Union Records Committee, commented: 'The manner in which the record of the Spurn Black Lark came to light was most unusual and, initially, raised a few eyebrows! From the documentation we received, however, it was obvious that the observers had been totally honest about the circumstances in which this came about. Although we had good notes and sketches, there was no photographic evidence and care had to be taken to eliminate all possible confusion species, especially those that might have escaped from captivity. Increasing field experience of Black Larks among members of both BOURC and BBRC, especially in relation to the variability in the white mottling on the basically black plumage, helped to convince them of the validity of the description. Advice from our captive-bird expert, Roger Wilkinson, indicated that there was no evidence that Black Lark was known in captivity at the time of the Spurn occurrence and this remains the case today. Unanimous belief among BOURC members that the bird had been identified correctly, together with the unlikelihood of a captive origin, enabled the Spurn Black Lark to be accepted as the first record of this species for Britain.'

Notes

All Notes submitted to *British Birds* are subject to independent review, either by the Notes Panel or by the *BB* Editorial Board. Those considered appropriate for *BB* will be published either here or on our website (www.britishbirds.co.uk) subject to the availability of space.

Marsh Harriers roosting in trees

On migration and in winter, Marsh Harriers *Circus aeruginosus* are found in a variety of both wet and dry habitats but most commonly roost in areas of farmland and marshes, typically using rank ground vegetation such as reedbeds, saltmarsh or long grass, where they may form communal roosts of considerable numbers, even hundreds, of birds (del Hoyo *et al.* 1994; Ferguson-Lees & Christie 2001). In Malta, Marsh Harriers regularly form communal roosts during both spring and autumn passage. Since the islands have few suitable wetland habitats that afford the necessary protection, roosts tend to form in agricultural fields. Although this behaviour is regularly observed in spring, an unusual phenomenon occurs in autumn at one particular roost, in the small wooded area of Buskett, which enjoys protection from hunting. Here, Marsh Harriers regularly roost in trees and occasionally form large communal roosts. During migration, Buskett is also used as a roosting site by other raptors, in particular Honey-buzzard *Pernis apivorus*, Black Kite *Milvus migrans*, Common Kestrel *Falco tinnunculus*, Lesser Kestrel *F. naumanni*, Hobby *F. subbuteo* and Eleonora's Falcon *F. eleonorae*.

Tree-roosting behaviour was first observed and documented in 1981, when Balzan & Fenech (1981-83) noted single Marsh Harriers occasionally roosting in trees, but it was not until 1991 that this habit became firmly established (Mallia & Mangion 1991; pers. obs.). Subsequently, tree roosting has occurred with increasing frequency, and on a few occasions in recent years, flocks of 150-200 Marsh Harriers have roosted in trees at Buskett, chiefly in Aleppo Pines *Pinus halepensis* and Italian Cypress *Cupressus sempervirens* (Sammut & Bonavia 2004).

Roosting behaviour

At Buskett, Marsh Harriers gather in the late afternoon, usually individually or in small groups, and tend to spend much time circling and surveying the area. As numbers increase gradually, they congregate into larger groups, at times forming a single pre-roost flock of more than 100 birds. On the evenings when Buskett is used as a roosting site, they remain in the area for some time, on occasions soaring high and later descending to a lower altitude. Sometimes the flock moves away and later returns, perhaps only when it is almost dark. Eventually, however, they select the preferred roost site, typically in one of two stands of Aleppo Pines or cypress, which they circle above for some time, until one bird descends into the roost. If not disturbed, it is followed immediately by other birds. If many birds are present, they can form an almost continuous stream of birds descending into the trees.

Similar pre-roosting activity by Marsh Harriers has been widely observed elsewhere (e.g. Clarke 1995). In areas where they are not persecuted, pre-roosting groups congregate for up to an hour before sunset, often on a convenient bare surface close to the roosting site. After sunset, they leave the pre-roost area to prospect the actual roost site. On Malta, it appears that the aerial activity preceding roosting at Buskett is equivalent to the pre-roosting behaviour described elsewhere. Owing to the heavy persecution of raptors in Malta, this aerial milling is the only way for Marsh Harriers to avoid premature death, as those that do try to perch elsewhere are shot and never make it to the roost.

Discussion

Two issues arise in relation to the roosting behaviour of Marsh Harriers in Malta. First, why do migrating Marsh Harriers roost in the Maltese Islands when they are quite capable of continuing their journey, even by night? Second, why do they select tree roosts, particularly at Buskett? The reasons for this unusual behaviour are not fully understood, although it seems likely that a combination of factors is responsible. In fact, many Marsh Harriers do not roost at Buskett, and numbers roosting vary daily. On most days, many continue their journey without roosting and only those birds arriving late in the afternoon usually roost (table 1).

Factors that may influence the decision to

Table 1. Number of Marsh Harriers *Circus aeruginosus* counted throughout the afternoon, and observed going to roost in woodland at Buskett, Malta. Counts are totalled over five-day periods throughout September and early October, 2001-2003.

Date	2001		2002		2003	
	Counted	*Roosted*	*Counted*	*Roosted*	*Counted*	*Roosted*
1st-5th September	34	12	109	18	220	45
6th-10th September	61	4	101	19	202	0
11th-15th September	101	3	1,267	200	131	0
16th-20th September	51	5	127	0	65	0
21st-25th September	102	6	11	0	73	0
26th-30th September	364	98	143	34	64	1
1st-5th October	205	0	244	60	20	2
6th-10th October	168	90	17	0	18	0

roost (rather than continue flying) include both local weather conditions and weather conditions encountered during migration, which could affect the physical state of the birds. My observations suggest that roosting usually takes place during periods of fine, settled weather which has persisted for at least two days prior to roosting, and continues for two or more days after roosting. This implies that avoidance of impending adverse weather systems affecting the migration path is not a factor in the decision to roost. However, as Marsh Harriers are not averse to long sea crossings, those which roost at Buskett may have just arrived from a long, arduous journey from breeding grounds in central Europe prompted by good weather conditions. Those birds arriving early in the day may have roosted on nearby Sicily, and are probably able to continue their journey on into North Africa. Birds arriving later in the day, which may have been on passage for several days prior to the sea crossing to Malta, may be more inclined to roost. The fact that not all harriers passing through Malta roost locally lends support to this theory.

But why should Marsh Harriers roost in trees? This habit has not developed in spring on Malta, when the harriers traditionally roost in cereal crops and rank grassland along the edge of the islands' airport. In autumn, however, crops have been harvested, the fields ploughed, and long-dead grass by the runways has been removed as a fire risk. With their preferred roosting habitat removed, Marsh Harriers have only a limited number of options available. The answer, therefore, may lie simply in the fact that Buskett is the only area of the island which is protected effectively from poachers, but it happens to be predominantly forest (the fields surrounding Buskett are ploughed and bare at this time). Those Marsh Harriers that choose to roost here are constrained to use the only available habitat: trees. If Marsh Harriers selected tree roosts at other sites on Malta, they would be shot while attempting to roost.

In recent years, similar tree-roosting behaviour has been observed during spring migration on the island of Comino (which lies between the larger islands of Malta and Gozo), also a protected bird sanctuary, which lends support



Michael Sammut



Michael Sammut

169 & 170. The wooded areas at Buskett, Malta, where tree roosting by Marsh Harriers *Circus aeruginosus* occurs, as described in the text; January 2005.

to this theory (pers. obs.). As cereal crops are not grown on Comino in spring, the preferred roosting cover is not available, and Marsh Harriers roost in a grove of Aleppo Pines. Usually only single birds roost here in spring but, on occasions, small groups of up to ten birds have roosted in trees. As yet, it is not known whether tree roosting occurs on Comino in autumn.

The sight of Marsh Harriers roosting in trees has become normal at Buskett, but numbers doing so have declined in recent years, particularly in the autumn of 2004. Although human activity could be important, a more obvious factor is that the trees within the roosting areas at Buskett were heavily pruned and most of the undergrowth removed. This has opened up the canopy and transformed the area into a more open habitat, which seems to have deterred Marsh Harriers from using it as a roost site. Although still protected from illegal hunters, Buskett presently offers roosting Marsh Harriers rather less sanctuary than they have enjoyed in the past. It is hoped that trees and undergrowth will regenerate quickly and provide Marsh Harriers and other raptors with a secure roost site in an otherwise hostile environment.

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I would particularly like to thank John Azzopardi for his help and assistance with background research, and for his advice and additional comments on this paper. Thanks also go to Andrea Corso and Marvic Sammut for their support in the preparation of this paper, and to Edward Bonavia who compiled the daily counts of Marsh Harriers throughout the migration seasons. I would also like to thank all local and overseas birders who assisted in the field observations; and BirdLife Malta and the local authorities for their efforts to ensure that Buskett remains a secure place for raptors during migration.

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Defence attack by Red Grouse on Hen Harrier

On 1st June 2004, I was watching an adult male Hen Harrier *Circus cyaneus* hunting over an area of Heather *Calluna vulgaris* moorland that had been strip-burnt to benefit Red Grouse *Lagopus lagopus*. The bird was floating slowly over the moor, at a height of approximately 1 m, making occasional, but unsuccessful, drops onto potential prey. From an area of rank Heather, a male Red Grouse suddenly leapt upwards, turning upside down in the process, to strike the harrier a blow to its underside, seeming to punch upwards with its feet as it did so. This aggressive action was accompanied by much strident alarm calling.

The harrier, on being attacked, slipped sideways, avoiding the worst of the blow, though it was clearly struck on its flank. It did not alter its flight direction, but gave itself a shake immediately after the attack before continuing. Perhaps surprisingly, it did not circle round to investigate the site further or to make an attempt at catching prey, as I have often witnessed them do when they see something of interest. I discussed the incident later that day with Bruce Walker, who assists in the management of these moors. Apparently, he had also witnessed such an attack, some years previously, but on that occasion he had found the male grouse to have small young in attendance.

Chris Sharpe
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Opportunistic feeding by female Hen Harrier

On 5th June 2004, my colleague Naomi Scuffil and I were watching a female Hen Harrier *Circus cyaneus* foraging over an area of young plantation and wet heath/scrub. After several minutes of unsuccessful quartering, typically about 1-2 m above the ground, the bird suddenly changed direction and flew strongly to the southeast, gaining height as it did so. Following the bird through binoculars, we saw that it was approaching a male Hen Harrier being mobbed by small passerines, almost certainly Barn Swallows *Hirundo rustica*, over a farm. On reaching the male, the female quickly took one of the mobbing birds, catching it in mid-flight, and then flew back towards us, disappearing from view to what we later found to be the nest-site. To reach the male and accompanying Swallows, the female had had to fly over 700 m. It is presumed that this was an opportunistic event, rather than a planned hunting strategy.

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Common Kestrel and Carrion Crow using the same tree for nesting

During the winter of 2003/04, a nestbox for Common Kestrel *Falco tinnunculus* was placed in a small, mature oak *Quercus*, on the outskirts of Guildford, Surrey. This tree was located in the middle of a large, rough grassy field and surrounded by arable crops in the neighbouring fields. Two other suitable oaks stood nearby, along with others in a dividing hedgerow. The selected oak was 17 m in height, with the box situated 4 m from the top.

On 6th May 2004, I climbed the tree to inspect the box and discovered a Carrion Crow's *Corvus corone* nest with three recently hatched young in a fork of the main trunk, at a height approximately 7 m above the ground. I was surprised at both the low height of this nest and the choice of site, but even more surprised when I carried on up and found that the kestrel box contained five eggs. When the tree was next climbed, on 24th May, the three Carrion Crow chicks were nearly ready to fledge and the five Common Kestrel eggs were still being brooded. On 16th June, the Carrion Crow chicks had fledged, and four of the Kestrel eggs had hatched and the chicks were ready to ring.

Despite ringing many Kestrel broods over the years, I have never come across these two species nesting in close proximity before, let alone sharing the same tree. Typically, they are extremely aggressive towards each other, especially during the breeding season. I can find no reference to this behaviour in *BWP* or in Village (1990).

Reference

Village, A. 1990. *The Kestrel*. Poyser, London.

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Behaviour, nest-site selection and the use of artificial nest-sites by Red-footed Falcons in Hortobagy National Park, Hungary

The Red-footed Falcon *Falco vespertinus* breeds on the steppe grasslands of eastern Europe and western Asia, extending from the plains of Hungary east to northern Kazakhstan. The Hungarian population is the largest in Europe outside Russia, and is currently estimated at 600 pairs. In recent years, the number of Red-footed Falcons breeding in Hungary has declined dramatically, and this is believed to be connected with the decreasing population of Rooks *Corvus frugilegus*. Red-footed Falcons do not build their own nests and are dependent on the availability of deserted nests in colonies of Rooks. Until recently, Rooks were common breeding birds in the planted windbreak and shelterbelt woodland on the Hungarian plains, but have largely disappeared over the last 20 years. In response, Red-footed Falcons have adapted to use the nests of Magpie *Pica pica* and Hooded Crow *C. cornix*, but these species are solitary breeders and Red-footed Falcons using isolated sites are less productive than those breeding in



Janos Vilagosi



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171-173. Red-footed Falcons *Falco vespertinus* utilising artificial nest-sites, both nestboxes and flowerpots, Peteri Wood, Hortobagy National Park, Hungary.

colonies, fledging on average one fewer chick than those breeding colonially. Currently, 65% of the Hungarian Red-footed Falcon population uses Magpie nests, 15% Hooded Crow nests, and just 15% still breeds in Rook nests.

Red-footed Falcons in Hortobagy National Park

Hortobagy National Park is an important breeding area for Red-footed Falcons, and Peteri Wood, in the centre of Hortobagy, provides ideal breeding habitat. The wood is approximately 1.5-2.0 ha in extent and quite open in places, with False-acacia *Robinia pseudoacacia*, Russian Olive *Elaeagnus angustifolia* and poplar *Populus* being the dominant tree species. A large wetland (c. 130 ha) adjacent to the wood supports numerous dragonflies (Odonata), large insects and amphibians which, in turn, provide a ready food source for Red-footed Falcons. Dry and warm conditions in May and June encourage a thriving population of grasshoppers (Orthoptera), which form a stable source of food for the colony throughout the breeding season. This is supplemented during the harvest in the second half of June, when the extensive fields of hay and corn in the surrounding area offer rich pickings at a time when growing chicks are demanding extra food. On occasions, groups of up to 25-30 Red-footed Falcons follow the harvester, snatching insects as they are disturbed. On calm summer evenings, many birds from the colony, at times up to 50-60 individuals, can be watched hawking for Common Cockchafers *Melolontha melolontha* and Summer Chafers *Amphimallon*

Table 1. Number of breeding pairs of Red-footed Falcon *Falco vespertinus*, Common Kestrel *F. tinnunculus* and Long-eared Owl *Asio otus* breeding in Peteri Wood, Hortobagy National Park, Hungary, 2001-03.

Year	Red-footed Falcon	Common Kestrel	Long-eared Owl
2001	5	1	2
2002	12	9	5
2003	26	8	5

solstitialis over the wood.

There have been reports of Red-footed Falcons feeding toads (Bufonidae), water frogs *Rana* and Common Spadefoot *Pelobates fuscus* to their young, and this may be more frequent than previously recognised. Traditionally, it has been assumed that the falcons feed on toads or frogs only in cold, wet weather, when other prey is less active, but young were fed regularly with water frogs during the hot, dry summer of 2003; this may simply be a natural response to a decline in large-insect availability.

Breeding in Peteri Wood

Red-footed Falcons nested annually in Peteri Wood until 1996, when the rookery was abandoned. Subsequently, the falcons attempted to breed in the disused nests of Magpie and Hooded Crow, and in hollows in old trees, but with only limited success. The population declined, with figures for Hortobagy National Park as a whole showing 500-600 pairs in 1973, 300-350 in 1996 and just 180 pairs in 2001.

In 1998, artificial nest-sites were constructed in Peteri Wood, but the initial attempts, using small baskets placed in trees to replicate tree nests, failed. Nestboxes had been used successfully in other regions of Hungary, however, so in spring 2002, 30 nestboxes and 30 flowerpots were placed in the wood. Red-footed Falcons immediately took to these sites (see plates 171-173), and the breeding population in this small wood doubled in just one year. In addition, these artificial nest-sites encouraged Common Kestrels *Falco tinnunculus* and Long-eared Owls *Asio otus* to breed in the wood, both of which feasted on the large numbers of Common Vole *Microtus arvalis* and Mound-building Mouse *Mus spicilegus* present in 2002.

In 2003, a further 50 nestboxes and several more flowerpots were sited in Peteri Wood. The results were dramatic (see table 1), with the population of Red-footed Falcons increasing, while numbers of Common Kestrels and Long-eared Owls remained stable, despite a crash in the rodent population. In addition, several first-summer (non-breeding) Red-footed Falcons, of both sexes, were also present.

Nest-site preference

Observations revealed that Red-footed Falcons prefer boxes placed in isolated trees at the edge of the wood. Some also used flowerpots placed in olive trees *Olea*, which perhaps resembled an old Magpie's nest, although these sites were clearly less popular than nestboxes. Minor modifications to the extra nestboxes erected in 2003 showed that these were preferred to the original boxes. Although the basic dimensions remained unchanged, based upon a 300-mm cube, the depth of the entrance was increased from 150 mm to 180-200 mm, by incorporating a sloping roof (see plate 172). This enabled the female to stand at the entrance of the box, and these boxes were selected in preference to the older design, and to other artificial and natural sites available (table 2).

Table 2. Nest-site selection by Red-footed Falcon *Falco vespertinus*, Common Kestrel *F. tinnunculus* and Long-eared Owl *Asio otus* in Peteri Wood, Hortobagy National Park, Hungary, 2002-03.

Nest-site	Red-footed Falcon		Common Kestrel		Long-eared Owl	
	2002	2003	2002	2003	2002	2003
Nestbox	3	20	8	8	2	5
Flowerpot	4	3			1	
Tree hollow	2	2				
Magpie *Pica pica* nest	2	1			3	
Hooded Crow *Corvus cornix* nest	1		1			

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Peregrine Falcon preying on Leach's Storm-petrels

While watching an impressive number of seabirds migrating off Strumble Head, Pembrokeshire, on 21st September 2004, we noted a Peregrine Falcon *Falco peregrinus* repeatedly chasing and occasionally catching Leach's Storm-petrels *Oceanodroma leucorhoa*. During our observations, between c. 09.00 and 14.00 hrs, four Leach's Storm-petrels were successfully caught. In each case, the Peregrine achieved success by making swift stoops from a relatively low height, grabbing its prey from just above the surface of the water. Occasionally, a Leach's Storm-petrel would take evasive action, by weaving and dashing in an erratic fashion, to avoid capture. After each successful strike, the Peregrine brought its prey back to the cliff a few hundred metres to the east of our watching position, where it was consumed.

Cliff Benson retrieved the remains of the corpses and, based upon the structure of the feathers, it appeared that those examined were birds of the year. Did their inexperience make them more vulnerable to predation, and were the birds that evaded capture perhaps adults?

GR had previously witnessed similar behaviour. On this occasion, a single Leach's Storm-petrel was taken on 7th October 2003. He again observed this behaviour on both 20th and 22nd September 2004, with presumably the same Peregrine Falcon involved as on the 21st, and possibly also in 2003.

Derek Moore
Rowan Howe, Gors Road, Salem, Llandeilo, Carmarthenshire SA19 7LY
Graham Rees
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EDITORIAL COMMENT We have already published a note describing a Peregrine taking Leach's Storm-petrels (*Brit. Birds* 81: 395), but this note describes the capture in more detail.

Common Cuckoo parasitising Barn Swallow

In 1998, the landlord of my local pub in Leighton Bromswold, Cambridgeshire, alerted me to a strange bird nesting under a covered carriage gate at the side of the premises. The site is used annually by Barn Swallows *Hirundo rustica* and it was no surprise to see a new Swallow nest perched on the end of one of the roof trusses. However, the nest was occupied by a well-grown Common Cuckoo *Cuculus canorus* chick, and I was able to watch the adult Swallows return to the nest and feed the young Cuckoo. The Swallows successfully brought up the chick, which fledged not long afterwards.

Tim Pankhurst
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EDITORIAL COMMENT Barn Swallow has been recorded before as a host for the Common Cuckoo (for example *Brit. Birds* 66: 279-280; 67: 478; see also the Editorial Comment with the former, which gives a list of other published instances), but this is a rare event, and perhaps worth placing on record.

Reviews

THE DVD-ROM GUIDE TO BRITISH BIRDS VERSION 8

BirdGuides, Sheffield. Single DVD-ROM (compatible with Windows 98, 2000, ME, NT, XP and Mac OSX). Multimedia product including over 1,200 video clips, extending to over five hours playing time; sound clips; photos; maps and other illustrations. £49.95.

A decade on, this is the eighth incarnation of the flagship multimedia product from BirdGuides, now containing over 3 GB of content, and still supplied on just a single DVD (no fiddly multi-disc CD-ROM version to contend with). One of the most important aspects of any software should be ease of use. So, no manual and a single sheet of instructions is a promising start, especially when followed by easy installation. The only slight problem I had came from Quick Time (proprietary software required for video playback), which unexpectedly asked for registration information; it transpired that this was actually not required. The interface for this version is new and based on that used for *BWPi*. It is fairly straightforward to use, and the learning curve is not too steep.

For every species, there is a wide range of content, including paintings with brief but informative annotations, a concise file of text, an audio commentary (which, strangely, cannot be played while viewing other content), maps showing British and European distribution, sound files and, of course, the video sequences, which can now be shown full-screen in this version. There are at least two video clips for every species (many of which are composites) and the quality is generally extremely good; the few poorer clips have usually been included for a good reason. More information about the date and location would have been welcome, however. This is generally not provided, even though a surprising number of sequences have been filmed overseas, occasionally depicting races not occurring in Britain. The video clips convey the essential jizz of a bird more effectively than any book. On this DVD, there is even the option to split the screen and show two species at the same time, a particularly useful feature when it comes to separating tricky pairs, such as winter-plumaged Black-necked *Podiceps nigricollis* and Slavonian Grebes *P. auritus*. For the beginner, these clips are even more instructive than poor field views. Nothing can replace field experience, but there is not the opportunity to replay or freeze-frame in the field.

There is an argument for saying that too many species are included for the beginner but not enough for the expert. Since every species recorded more than 100 times in Britain is included, it is possible to compare video sequences of many difficult species pairs directly, for example Dusky *Phylloscopus fuscatus* and Radde's Warblers *P. schwarzi*. Surely, though, anyone ready for this challenge would also benefit from viewing sequences of rarer species, such as Pallid Harrier *Circus macrourus*, alongside their congeners; but unfortunately this is *not* possible here. BirdGuides does produce a *Guide to Rarer British Birds*, which complements this product (but without the full-screen capability as it is available only on CD-ROM); and also a DVD-ROM *Guide to European Birds*, which is far more comprehensive but more than twice the price, and not yet upgraded to the current interface. If DVD quality video is the main interest, then there are also products by BirdGuides and Paul Doherty to consider, which are suitable for viewing on a normal DVD player.

An interactive DVD-ROM may not replace a traditional field guide, but this is certainly an excellent complement. This comprehensive source of accurate and authoritative information is extremely easy to use, slick and well produced. The product is already well-established in the market and much loved, and it is becoming almost a cliché to say that the three things you need if you are just becoming a serious birder are good binoculars, a copy of the *Collins Bird Guide* and this DVD. This perceived wisdom is becoming ever more difficult to argue with.

Mike Pennington

BIRDS – THE ART OF ORNITHOLOGY

By Jonathan Elphick. Scriptum Editions, London, 2004.
336 pages; 204 colour and some black-and-white illustrations.
ISBN 1-902686-39-X. Hardback, £45.00.

One of the good things about art books is that publishers seem determined to go for a quality production, and this sumptuous and beautiful volume is no exception. The illustrations are reproduced almost entirely from original works held in the Natural History Museum, and the book was published in conjunction with the Museum. The quality of the plates is superb; many of them are full page and, as the book is roughly a foot square, look hugely impressive. The high quality of the paper used has resulted in great clarity and brightness in the plates.

Being essentially a history of the artists, with examples of their work, the book is arranged chronologically and divided into four periods. These cover the early engravers and explorers, 1650-1800; the age of Audubon and the

first lithographers up to 1850; the 'golden age' of lithography up to 1890; and then what Elphick calls the 'transition age' from 1890 to the present. The text is delightfully readable, and is not only an account of the lives and work of the artists, but also of the wider contemporary ornithological scene, with all the changes and developments which inspired and influenced them. Each of the illustrations has data on the size of the original and the medium used, as well as comments by the author.

I felt that Audubon was rather over-represented, with 15 of his well-known illustrations reproduced, but a real eye-opener for me were the 13 watercolours by his friend William MacGillivray. These were part of a corpus of work intended to illustrate his monumental *History of British Birds*, but owing to lack of funds they were never used. In my opinion, they are much better and more lifelike than Audubon's work, and they surely merit a volume of their own. A number of plates, especially Audubon's, extend across the gulley but, by contrast, I found it curious that a Bewick woodcut measuring about 2" square in the original has been enlarged, and reproduced at 10" x 8". There are one or two cases where more careful editing would have been desirable. For instance, it is a pity that a Thorburn portrait of a Carrion Crow *Corvus corone* with a Common Pheasant *Phasianus colchicus* chick, which appeared originally in Lilford's great work *Coloured figures of the Birds of the British Islands*, and subsequently in numerous editions of Coward's *Birds of the British Isles*, and in the *Observer's Book of Birds*, is misidentified and discussed as being of a Raven *C. corax*.

The author highlights the difficulty of selecting artists for inclusion, but he was clearly constrained by the availability of work in the Museum. Consequently, while the sections for the period before 1890 averaged nearly 100 pages, the most recent period gets only 54 pages, and many important names fail to appear. I was able quite easily to make a list of about 130 artists of this period, yet only 14 get an illustration, and that includes three unknown to me. The omission of artists such as Amuchestegui, Bateman, Ching, Cooper, Ede, Jacques and Jonsson hardly justifies the title of this section. Much earlier, by far the best illustrated book of its time was Olof Rudebeck's *Book of Birds*, which appeared between 1693 and 1710, and it is a pity that some of his work could not have been included.

It is true, of course, that a comprehensive history of ornithological art would be a massive undertaking, and the selection in this beautiful book is a tribute to both the wonderful collections in the Natural History Museum and the sheer amount of research and work that the author has concealed in his effortless and lucid prose. For anyone at all interested in this absorbing subject, and who likes a beautiful and important book, I can thoroughly recommend this one.

Martin Woodcock

ERIC ENNION: ONE MAN'S BIRDS

Edited by Bob Walthew. The Wildlife Art Gallery, London, 2004. 144 pages; 475 sketches and 26 plates. ISBN 0-9526-2368-4. Hardback, £35.00.

Towards the end of the twentieth century there was a huge increase in the number of young wildlife-artists trying to make a living from their skills. Many of them, myself included, would name Eric Ennion as their biggest influence when starting out. It is ironic, yet seems to be the 'norm' in many cases, that his greatest popularity grew after his death.

One Man's Birds concentrates on his fieldwork sketches from the 1930s onwards; this work built into a crucial reference and shaped the development of his unique style. Some of these images first appeared in *The Living Birds of Eric Ennion* (Gollancz, 1982), which is a delightful book, depicting his sketches plus preliminary drawings; they were accompanied by John Busby's knowledgeable texts that gave us an insight into his work.

In the mid 1980s, a fellow Ennion fan and I made our way into deepest Wiltshire to pay homage to this work. We were greeted and made to feel as welcome as long-lost friends by Eric's son Hugh, and a hugely enjoyable few hours passed in what seemed like seconds. We were able to admire the sketches from the Gollancz book, displayed eccentrically in a battered old lever-arch file, and the preliminary sketches, which were squashed into a well-travelled suitcase; the work of a master packed into two humble vessels, so typical of the man. Apart from the sheer beauty of the work, two things stood out for me. First, the sketches were so tiny; amazing detail and vivid colour were squeezed into such small areas – some paintings were no bigger than your smallest fingernail. The other surprise was that there were so many of them – pages and pages of paintings not used in the Gollancz book at all.

And this is where *One Man's Birds* steps in; this time, virtually all of the sketches are reproduced, and a grand job The Wildlife Art Gallery has made of it too. It is a beautifully presented book; every page is bursting with living birds painted with the skill of an eye born out of years of experience. With just a few exceptions, all the works are reproduced life-size, and once that fact sinks in you realise what an amazing artist he was and what effort went into each one. For example, on page eight, look at the way he has picked out the spots of a Common Starling *Sturnus vulgaris* by painting around them and

yet still manages to gradate the purple wash between them – sheer genius. Apart from the sketches, this book also gives us the chance to enjoy the plates from *Bird Man's River* – a book that Ennion could not get published.

To enhance the images, some of Ennions's writings are also used, he is a fine wordsmith and the texts take you easily and imaginatively through a much simpler age. My favourite is his evocative description of an intrepid trip to Iceland where, among other encounters, he camped out among the Harlequins *Histrionicus histrionicus.*

During the autumn of 2004, The Wildlife Art Gallery hosted an exhibition of Ennion's sketches and many of his paintings. It gave those who love his work a unique chance to see so much of it displayed at one venue. If you didn't make it, then go for the next best thing and buy this book; you will feel totally uplifted by it, a complete antidote to the arid identification guides!

Dau Powell

THE BIRDS AND MAMMALS OF CAITHNESS: ROBERT INNES SHEARER'S CONTRIBUTIONS TO THE NATURAL HISTORY OF CAITHNESS, 1859-1867

Compiled and edited by Hugh Clark and Robin M. Sellers. Bellfield Publications, Caithness, 2005. 248 pages; line-drawings; maps. ISBN 0-9549197-0-X. Paperback, £14.95 (available from Hugh Clark, 3 Lindsay Place, Wick, Caithness KW1 4PF).

At first sight, reprints of what could be called 'Nature Notes' from a local paper almost 150 years ago might appear to be of limited interest. In fact, these articles are gems that give an insight into not only the status of some of the fauna in Caithness but also the general state of knowledge and understanding of birds at the time.

The bulk of the essays are on birds, published in the *John O'Groat Journal* almost weekly, mainly in 1859 and 1860, each one usually devoted to a single species. They demonstrate that Shearer was a meticulous observer and ready to challenge the accepted orthodoxy when his observations led him to a different view. At the time, bridled and non-bridled Common Guillemots *Uria aalge* were considered separate species, but Shearer was adamant that they were the same, based on their identical behaviour and the fact that they nested together.

As with many others of that era, the gun was an important aid to some of his observations, particularly for various measurements and plumage details that frequently supplement his species accounts. His observations of behaviour and his tips on fieldcraft show that he was also a skilled field naturalist.

There are further writings on bird migration and mammals taken from the *John O'Groat Journal*, together with some 'Notes from Caithness' published in *The Field* and a paper listing the birds on the 'Caithness List' at that time. The compilers/ editors add their own commentary on Shearer's writing and give brief comparisons with each species' status today. They are to be congratulated on opening this window on a bygone era which is a delight to explore.

Tony Mainwood

THE BIRDS OF WINTERSETT

By Steven Denny. Wintersett Wildlife Group, Wakefield, 2003. 100 pages; colour photographs; figures; tables. Paperback, £12.00.

This is local ornithology at its best. Wintersett, in West Yorkshire, lies between Wakefield and Barnsley, and its recording area measures only 4 km x 3 km, yet it boasts a species list of 242. The site has a long history of industrial exploitation for coal and the mines needed a canal so it also has two reservoirs. Another lake derives from an opencast site converted into a public park, which includes Haw Park Wood, a fragment of the ancient Don Forest. Also included within the area is one of the most famous scenes of conservation history: the park and lake of Walton Hall, developed by the naturalist Charles Waterton (1782-1865), who died at 2.27 on a May morning 'as the Land-Rail was craking from the ox-close' and was buried beside the water after the pageant of an aquatic funeral.

The excellent introduction describes the history of the area and its complicated conservation problems, some of which still demand sensitive management. The bulk of the book is an extremely detailed species list. An appendix contains histograms and annual checklists, while the photographs illustrate the habitats and some notable rarities, including three species of redpoll *Carduelis* in the hands of their ringers simultaneously. The only drawback is the slide binding; A4 books need to lie flat on opening. Available from the author at 13 Rutland Drive, Crofton, Wakefield WF4 1SA (post free).

David Ballance

GARDEN BIRD BEHAVIOUR

By Robert Burton.
New Holland, in association with The Wildlife Trusts, London, 2005. 144 pages; numerous colour photographs and illustrations.
ISBN 1-84330-938-6.
Hardback, £16.99.

Recently, I was told that 12 million people were thought to feed the birds in their garden. I would have thought that every one of them would find this new title by Robert Burton a godsend to have on the shelf. The book lucidly describes behaviour of the regular visitors to our gardens, covering everything from feeding preferences, breeding behaviour and bird song to the more quirky habits concerned with fostering, sunbathing, anting and avoiding predation.

The book is lavishly illustrated with colour photographs and paintings, and has a number of useful highlighted boxes giving specific information. One of the latter tells the reader what to do if they can read the number on a ring and how to get in touch with the BTO. Others deal with subjects such as mate selection, mimicry, diet and intelligence. One in particular illustrates the clutch sizes, broods, laying seasons and incubation periods of most of the commoner garden birds.

I have fed the birds in my garden for many years but it is only recently, in retirement, that I have been able to watch for any period of time what exactly is going on out there. Our current Welsh garden holds anything up to 200 birds of about 16 species at any one time. The interaction between them all and their adaptiveness to the food provided is fascinating to say the least. It took one year before Common Chaffinches *Fringilla coelebs* learnt how to get at the niger seed and less time for Eurasian Nuthatches *Sitta europaea* to plant sunflower seeds in every pot and between the cracks of the patio.

The author has provided a great volume for those like me who spend hours watching the birds in their garden, and its contents will go far to answering all the questions that might be posed. It is a must, and if all 12 million get a copy, he will be a wealthy man.

Derek Moore

WHY MUSEUMS MATTER: AVIAN ARCHIVES IN AN AGE OF EXTINCTION

Edited by Nigel Collar, Clem Fisher and Chris Feare. Bulletin of the British Ornithologists' Club, Vol. 123A Supplement, 2003. 360 pages.
ISSN 0007-1595.
Softback, £22.00 Europe, £24.00 elsewhere, including p&p.

This is a symposium including an introduction, 20 papers, and a report arising from meetings of leading museum workers around Tring in November 1999. Its general theme is that museums are one of the main depositories of knowledge about birds, but have inadequate resources to support a growing variety of work at a time when birds are under increasing threat and there is a need to record as much as possible about them as a basis for devising adequate conservation programmes. So how well do they make their case?

Overwhelming evidence is provided that museums are a main source of information about bird character, affinities, ranges and history. Regrettably, they are now often in sad disarray, with historic specimens poorly documented and stored, often with labels and parts falling off, and inadequate resources to curate them, let alone add more material to complete collections and bring them up to date. There are also still some aggressive attitudes: one report describes the collection of 665 Great Grey Shrikes *Lanius excubitor* in a limited area for no clear purpose when surely a tenth of the number should have been adequate; another the collection of many bodies after oil pollution incidents – was this the best use of scarce resources? There is no comment on the similar value of collision casualties. This is certainly better than shooting things.

There are also useful accounts of varied techniques, involving long-standing skeleton, fossil, spirit, rare and type specimens, and now material for DNA investigations, and the compilation and exchange of holdings on the internet. There is comment on the unreliability of data, with entertaining examples; the usual people dance on Colonel Meinertzhagen's grave, with no comment that despite their faults both he and Gregory Mathews, dismissed as 'unprofessional' after graduating successfully from the Australian gold fields, did more good work than most of their critics put together. There is no comment that the thing that has made museums most unpopular is the collection of things other people want to conserve, or that conservationists could be more helpful by saving things found naturally.

The main problem is that this symposium involved enthusiasts, who evade all the worst problems. While museums are usually supposed to be public servants, and most are hospitable if approached politely, they do not always present themselves attractively. Public displays are often obsolete, while junior staff may adopt an off-hand attitude. There is also a growing tendency for bureaucratic restrictions, imposing fees for artwork, and limitations on the loan or exchange of specimens and the availability of very small fragments for DNA analyses, for example. Museums do not have so many friends that they can afford to alienate any of them.

Bill Bourne

ARRIVALS AND RIVALS: A BIRDING ODDITY

By Adrian Riley. Brambleby Books, Harpenden, 2004. 165 pages; 16 colour photographs. ISBN 0-9543347-6-0. Paperback, £7.99.

Those who are motivated by the challenge of hard twitching will immediately identify with the emotions experienced by Adrian Riley in his quest to see a massive number of birds in Britain & Ireland in 2002. For him, the task started as a enjoyable personal challenge to see how many he could find, but it was not long before his success in seeing a huge number of birds put him in direct competition with two other birders – and in particular Lee Evans. This book tells the story of that competition.

Visits to all corners of the country are described, as are various short periods of despair when the author suffers at the hands of the weather, the police and a lack of sleep (and cigars). The book is full of short anecdotes, including one about a co-driver who insists on having a hearty meal on the way to a twitch. This immediately reminded me of how I gave up twitching after missing a Crag Martin by five minutes when the car driver had delayed our start by spending 20 minutes making sandwiches! Twitching is full of highs and lows and this book focuses much on the emotional experiences of year-listing rather than detailed discussions about the birds seen.

After 78,000 miles of travel and £8,000 of expense, Adrian Riley's year ended with a haul of 381 species, gaining several life birds, but losing a friend in the form of Lee Evans. If you are into twitching, then you'll probably enjoy this book, which is an easy read and short enough to get through on a twitch from the Midlands to the Scillies or Shetland (if you are not the driver!).

Keith Betton

WHERE TO WATCH BIRDS AND OTHER WILDLIFE IN MALTA

By Alex Casha. BirdLife Malta, 2004. 91 pages. ISBN: 99909-62-01-4. Paperback, £8.50 (including p&p from BirdLife Malta; www.birdlifemalta.org).

Malta is situated along the central Mediterranean flyway, and the local population has always been fascinated by its birdlife. A minority demonstrate this fascination by shooting and trapping, which has created the islands' present bad reputation for the mass slaughter of birds. Nonetheless, with a species list of more than 380, Malta can still be an interesting place to visit, especially during migration.

For this book, the author has selected a number of birdwatching sites with which he is familiar in Malta, Gozo, and Comino. The book starts with a brief introduction to habitat types and the flora associated with them. It also contains a general outline of bird migration as well as the breeding birds to be found in Malta. The book contains ten site accounts, each including a map and access instructions, together with a list of migrants and breeding birds. A brief description of other wildlife, both flora and fauna, completes each site account. A number of other sites, in both Malta and Gozo, are covered briefly in another section. There is a list of the birds more regularly seen in Malta at the end of the book, but a complete checklist of the birds of Malta, together with their status, would have been more appropriate and would have made this guide more complete (a separate checklist is available from BirdLife Malta). The Country Code and the Wildlife in Danger chapters add an important conservation message to the book.

As a 'where to watch birds' guide to the Maltese Islands, the book is rather limited since many good birding areas have not been included. Furthermore, the section concerning access to the sites mentioned could be improved, especially for foreign visitors (although the maps are very clear). Nonetheless, this book is inexpensive and easy to carry, and will be a useful tool for anyone planning to visit Malta for a birdwatching trip.

Michael Sammut

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

The Lord God bird – back from the dead

Imagine the pager message: 'MEGA – Great Auk on St Kilda!!' Well, the news from the USA is on a par with that; the Ivory-billed Woodpecker *Campephilus principalis* has been rediscovered alive and well, and living in Arkansas. Last sighted in 1944 – exactly 100 years after the last sighting of the Great Auk *Pinguinus impennis* – the Ivory-billed Woodpecker had long been considered extinct in North America, although sightings had been claimed in the intervening years. One of the world's largest woodpeckers, at some 50 cm long, this black-and-white titan was so dramatic a sight that early naturalists who encountered it reputedly exclaimed: 'Lord God!' and so it became known as 'the Lord God bird'.

Gene Sparling III must have said something similar when a male Ivory-billed Woodpecker treated him to a fly-past as he kayaked along a bayou in the Cache River National Wildlife Refuge, Arkansas, in February 2004. He posted his sighting on a website that was seen by Dr Tim Gallagher, editor of *Living Bird*, and Bobby Harrison, an Alabama ornithologist. They interviewed Mr Sparling and then paddled their own canoes down the bayou two weeks later... and saw what was probably the same male woodpecker. This was perhaps the most extraordinary twitch in history.

During the past year, expeditions by Cornell University (see http://birds.cornell.edu/ivory/index.html) and the University of Arkansas, conducted in great secrecy, have resulted in further sightings of the (same?) male Ivory-billed Woodpecker and four seconds of video footage which proved beyond doubt that the Lord God bird was back from the dead. Dr Gallagher said: 'Just to think this bird made it into the twenty-first century gives me chills. It's like a funeral shroud has been pulled back, giving us a glimpse of a living bird, rising Lazarus-like from the grave.' Frank Gill, of the National Audubon Society, equated it with sighting another late-lamented resident of the American South: 'This is huge. Just huge. It is kind of like finding Elvis.'

The Ivory-billed Woodpecker is dependent on old-growth forests of massive trees, such as cypress *Cupressus*, for its habitat. Destruction and fragmentation of virgin bottomland forests throughout the southern USA, including floodplain forests along the Mississippi River and its tributaries, led to its decline and eventually to its believed extinction. The last documented sighting – of a female in 1944 – was in the Singer Tract, just across the Arkansas state border in Louisiana. A resident subspecies (*C. p. bairdii*) occupied tall forests throughout Cuba, and a small population was mapped and photographed in eastern Cuba as late as 1956. Fleeting observations of at least two individuals in 1986 and 1987, by several experts, are widely accepted as valid, but repeated efforts to confirm continued existence of that population have failed.

The Ivory-billed Woodpecker is one of six North American bird species confirmed or suspected to have become extinct since 1880, joining Labrador Duck *Camptorhynchus labradorius*, Eskimo Curlew *Numenius borealis*, Passenger Pigeon *Ectopistes migratorius*, Carolina Parakeet *Conuropsis carolinensis* and Bachman's Warbler *Vermivora bachmanii*. The woodpecker has survived from an era of rampant logging to one of forest restoration, with the swampy Big Woods of eastern Arkansas now regenerating and providing potential habitat for the bird. Only a small fraction of the Big Woods has been surveyed, thus far holding out the hope that a viable population of woodpeckers may survive. There can surely be no better candidate for Important Bird Area (IBA) status.

Day trips to St Kilda

Meanwhile, if you think the Great Auk *is* waiting to be rediscovered, you may be interested to know that a new boat service offering day trips to St Kilda in the Western Isles has been launched. This must be the ultimate day trip for seabird enthusiasts, with the St Kilda archipelago holding Britain's largest concentration of seabirds. There will be a landing on Hirta (the main island in the group and home to the St Kilda Wren *Troglodytes troglodytes hirtensis*) and a sail around the islands to admire the highest sea-cliffs in Britain and the world's largest Northern Gannet *Morus bassanus* colony on the stacks and island of Boreray (see pp. 280-294). This remote island group has (inevitably) attracted some real rarities over the years, and a late-spring or autumn trip may pay big dividends – although facilities are basic and all supplies will have to be taken, plus the campsite booked in advance! The estimated cost for the boat trip is £80.00. Kilda Cruises (www.kildacruises.co.uk), sailing from the Isle of Harris, represents the first cheap and reliable access option; until now, dedicated cruise ships were the only means of visiting the islands.

(*Contributed by Andy Robinson, former St Kilda warden*)

The birdwatchers' code

With nearly three million people going birdwatching in the UK every year (according to market research company BMRB International), a partnership of organisations (including *British Birds*) has produced *The birdwatchers' code* to remind birders of their responsibilities. The five key tenets are: avoid disturbing birds and their habitats – the birds' interests should always come first; be an ambassador for birdwatching; know the law and the rules for visiting the countryside, and follow them; send your sightings to the County Bird Recorder and www.birdtrack.net; and think about the interests of wildlife and local people before passing on news of a rare bird, especially in the breeding season.

These are all eminently sensible suggestions for a code of conduct. The expanded code (see www.rspb.org.uk/birds/birdwatching/code/index.asp) includes details on countryside access across the UK and the law affecting wild birds. Acting as an ambassador for birding may be a novel role for some of our number. The code suggests:

- Respond positively to questions from interested passers-by. They may not be birdwatchers yet, but a good view of a bird or a helpful answer may light a spark of interest.
- Your enthusiasm could start a lifetime's interest in birds and a greater appreciation of wildlife and its conservation.
- Consider using local services, such as pubs, restaurants and petrol stations, and public transport. Raising awareness of the benefits to local communities of trade from visiting birdwatchers may, ultimately, help the birds themselves.

Welsh kites cross the border

The latest news on Red Kites *Milvus milvus* (i.e. breeding results from 2004) includes the headline that indigenous Welsh birds have finally crossed the border into England and bred successfully in Herefordshire. The Welsh Kite Trust (www.gigrin.co.uk/w/index.htm) reports that one pair nested in the north of the county and reared one chick.

In Wales in 2004, there were 369 occupied territories, 70 more than during 2003. In the 369 occupied territories identified, a total of 320 nests were located and a minimum of 299 pairs were thought to have laid eggs. At least 216 pairs were thought to have hatched eggs and 200 pairs reared at least 286 young.

News from Nigel Snell in the Chilterns – site of the first of the English reintroduction schemes – was that the Southern England Kite Group found 215 nesting pairs of which 205 were successful, rearing approximately 383 chicks. Most of these were in the core area in the Chilterns, but this total also includes several outlying nests. There was a nest in southern Hampshire for the second year running, two in Wiltshire (two and three chicks reared) and the first in Sussex (two chicks reared). There was also a confirmed nesting attempt in Devon, but that unfortunately failed.

In northern Scotland, the news was (again) much less positive. This reintroduction programme, which started in 1989 (at the same time as the Chilterns scheme), has suffered heavily from illegal persecution. Brian Etheridge, the RSPB's North of Scotland Red Kite Project Officer, reports that for the third year in a row there was no increase in the number of breeding pairs, which remains at 35 pairs. After the first pair bred in 1992, the population increased steadily until 1999, when it reached 30 breeding pairs (77 young reared). But the increase then slowed to reach 35 nesting pairs by 2002 (87 young reared) and has shown no further increase since then, despite excellent productivity.

It is believed that increased raptor persecution on surrounding grouse moors has led to an extremely low survival of dispersing young kites (less than 10% are currently reaching the breeding age of two years). The population is being maintained by high adult survival, adults being largely resident. One of the Scottish birds that hatched in 2004 was subsequently seen at the famous Gigrin Farm feeding station in mid Wales, where up to 300 kites can be seen on a winter's day, one of Britain's prime wildlife spectacles. Birds from Yorkshire were also seen at the farm. Sadly, Eithel Powell – the man who established the kite feeding station on his family farm in 1994 – died in April this year.

A thriving Harrier

SOGgy readers will know this already, but one of the better birding reads is the Suffolk Ornithologists' Group (SOG) quarterly, *The Harrier*. The harrier in question is the Marsh Harrier *Circus aeruginosus*, a familiar bird in the Suffolk marshes. And the periodical in question combines cutting-edge identification (such as Brian Small's analysis of Black-tailed Godwits *Limosa limosa limosa* and *L. l. islandica* in Suffolk), distribution articles, behaviour notes, trip reports and humorous features. The December 2004 issue contains a detailed report on the controversial curlew sp. at Minsmere (in September/October 2004). The annual subscription to the SOG is £13.00, and the membership secretary is Andrew Gregory, 1 Holly Road, Ipswich IP1 3QN.

What's the Estonian for 'Corn Crake'?

The names of 1,300 Western Palearctic bird species in 41 of the region's languages (including Latin) are now available on the Avionary website www.avionary.info

This astonishingly comprehensive set of dictionaries is an A-W (Albanian to Welsh) of bird lists, including Cornish, Manx and Scottish Gaelic. [The Estonian for Corn Crake *Crex crex* is *Rukkiraak*.]

RSPB launches a harrier offensive

In a direct challenge to the shooting interests which have killed so many Hen Harriers *Circus cyaneus* over the past decade, the RSPB has advertised the birds that have returned to its Geltsdale reserve on the Cumbria/Northumberland border. A male bird was seen 'skydancing' for two female birds in late April, raising hopes that the species may nest successfully at Geltsdale in 2005. If harriers do nest, the RSPB will spend £40,000 on a 24-hour nest-protection scheme.

Since 1995, the RSPB has compiled a shocking catalogue of Hen Harrier persecution incidents in Geltsdale. In 1995, at least seven harrier nests failed because of persecution. In 1997, a male harrier was shot. In 1998, a corpse of a shot harrier was found on the reserve. In 1999, a female harrier was poisoned. In 2000, a female harrier was shot. And in 2001, six eggs mysteriously disappeared from a harrier nest. Hen Harriers last nested successfully at Geltsdale in 2003, when four young were raised.

Nesting Hen Harriers have been monitored by English Nature since 2001. Richard Saunders, EN's Hen Harrier project manager, said: 'As a result of persecution, Hen Harriers first disappeared from England's moors around 150 years ago and it is very depressing how little has changed. Over this time, managed grouse moors have safeguarded some of our most precious moorland habitats, so it is disappointing that the reputation of shooting is still tarnished by those who continue to persecute one of our rarest and most beautiful birds.' A UK-wide survey last year showed that there has been a 44% increase in Hen Harrier numbers since 1998, but these increases have occurred largely away from grouse moors, especially in Wales, Northern Ireland and western Scotland.

Following the launch of Operation Artemis by police forces in upland areas last year, the RSPB has set up a Hen Harrier hotline, and urges anyone seeing a harrier on English moorland to report their sighting, giving exact details of the bird's location. The Society will use the information to ensure the protection of any nesting Hen Harriers. The hotline number is (01767) 680551.

New national survey of Marsh Harriers

A national survey of Marsh Harriers *Circus aeruginosus* is taking place this year, and the RSPB is appealing for records of sightings on farmland in eastern England. The Marsh Harrier was once Britain's rarest breeding bird of prey with just a single nest (at Minsmere, in Suffolk) as recently as 1971. Numbers have increased steadily since then; the last full national survey was in 1995 and recorded 155 nesting females. Ten years on, a further increase is expected, in both numbers and range; for example, see the latest Rare Breeding Birds Panel report (*Brit. Birds* 97: 511-512). The UK population of Marsh Harriers is still largely in eastern England, especially the Suffolk and Norfolk coasts, the Broads and around The Wash in both Norfolk and Lincolnshire. Numbers are increasing slowly and steadily in the Cambridgeshire Fens and in Essex. Outside the eastern counties, they have spread as far west as Lancashire and north to northern Scotland.

Known sites will be covered by RSPB staff and other regular observers. However, harriers are increasingly nesting in arable crops, usually either cereals or oilseed rape, and these sites can be especially difficult to find. Previously unknown harrier breeding sites are especially likely to occur in Lincolnshire, where the density of observers is thin. The RSPB requests that any sightings of birds in arable areas or isolated reedbeds from April onwards, particularly birds carrying nest materials or prey, are sent to national survey organiser John Day: tel: (01929) 550969 or e-mail: john.day.arne@rspb.org.uk All information will be treated as strictly confidential.



Mike Lane

174. Marsh Harrier *Circus aeruginosus*. Records of birds carrying nest material or prey are required by the RSPB for the national survey in 2005.

Centenary gongs for Roy Dennis and Bill Oddie

Two eminent members of the birding community, Roy Dennis and Bill Oddie, have both been honoured recently at ceremonies marking the centenary of august ornithological bodies. Roy Dennis won RSPB Scotland's Golden Eagle Award for 'contributing the most to conservation in Scotland over the past 100 years'. Roy has been associated with most of the success stories in Scottish raptor conservation for 40 years, after cutting his teeth at Fair Isle Bird Observatory (where even he couldn't turn the reintroduction of White-tailed Eagles *Haliaeetus albicilla* to Shetland into a success story). Roy has also been instrumental in the export of Scottish Ospreys *Pandion haliaetus* to Rutland Water in the English Midlands, and is now pioneering the satellite-tracking of British migratory raptors (www.roydennis.org).

Bill Oddie received the Peter Scott Memorial Award at the centenary conference of the British Naturalists' Association (www.bna-naturalists.org) in Essex in May. The BNA conference topic was phenology, so Bill Oddie was a natural choice for his sterling work on the BBC *Springwatch* (www.bbc.co.uk/nature/animals/wildbritain/springwatch) programmes, which have mapped various natural phenomena across spring 2005, such as the emergence of ladybirds (Coccinellidae) and the arrival of Common Swifts *Apus apus*.

Black Grouse reintroduction

Following the successful reintroduction of various raptor species – and latterly Great Bustards *Otis tarda* (see pp. 295-305) and Corn Crakes *Crex crex* (*Brit. Birds* 97: 548-549) – the latest species subject to a major reintroduction is the Black Grouse *Tetrao tetrix*. The third group of grouse – ten males and ten females – was released in April in the Upper Derwent Valley, Derbyshire, following the release of ten Blackcock in December 2004 and 30 young birds in October 2003. Midlands birders in particular will remember the Black Grouse lek at Swallow Moss in Staffordshire, but this population died out in the late 1980s/early 1990s.

The reintroduced birds are aviary-bred and the project is backed by the National Trust, Severn Trent Water and the Peak District National Park Authority. Andy Warren, conservation advisor at Severn Trent Water, said: 'The Black Grouse is an icon of the uplands and its presence reflects the healthy condition of moorland habitats. If we can reintroduce and maintain a population of these birds in the Upper Derwent Valley, we will know that we have our management just right. We have already learnt much from the achievements of the first year and are now building on that knowledge to ensure a greater survival rate year on year.' All the birds will be fitted with radio tags so that their survival and success can be monitored.

Mauritius Kestrels facing the bulldozer

It was at one point the rarest bird in the world, but the Mauritius Kestrel *Falco punctatus* has pulled back from the brink and its population is now up to 1,000 birds. But work has begun on a road on the Indian Ocean island which could devastate part of the kestrels' forest heartland. The Southeastern Highway will pass through the Mauritius east-coast mountains Important Bird Area (IBA), cutting a swathe through some of the last-remaining good-quality forest in this part of Mauritius.

From near-extinction in the 1970s, the kestrel's population has grown thanks to a captive-breeding and reintroduction programme run by the Mauritian Wildlife Foundation and the Government of Mauritius, working with international partners including the Durrell Wildlife Conservation Trust and The Peregrine Fund. The recovery of the Mauritius Kestrel is one of the world's greatest species-conservation success stories. The southeastern forest is home to half the world population, centred around the Ferney Valley, where the first reintroductions took place. Ferney Valley is in the path of both proposed routes for the new highway.

'Kestrels hunt for geckos inside the forest and require a habitat with high tree canopy and little undergrowth for their survival,' according to the Mauritian Wildlife Foundation (MWF), the island's biggest conservation NGO. 'Opening up the forest by building a road speeds up the invasion of the habitat by introduced species and leads to its rapid degradation, not only during the disturbance while the road is being built, but also afterwards, as it acts as a corridor for invasive animals and plants to travel along.'

Another globally threatened bird, the Mauritius Bulbul *Hypsipetes [borbonicus] olivaceus*, will be affected by the road. Like the kestrel, the bulbul is dependent on native forests and will suffer from any reduction in habitat.

A third threatened species, the Mauritius Cuckoo-shrike *Coracina typica*, disappeared from the mountain IBA a few decades ago, but following the success of the kestrel project, a reintroduction scheme has been proposed for this bird too. The road is being funded by the African Development Bank. The MWF has been lobbying both the Mauritian government and the Bank to consider alternative routes, or at the very least to ensure that harm to the biodiversity of the area is minimised.

Birding in Cyprus

Birdwatchers visiting Cyprus may be interested in the recent experiences of *BB* reader David Kings, who has visited Cyprus in spring and autumn for a number of years: 'On 2nd November 2004, my wife and I approached Asprokremmos Reservoir, following the directions given in *The Birds of Cyprus* (BOU Checklist No. 6, Flint & Stewart 1992), stopping approximately 200 m from the reservoir to check through the birds in an olive tree. After about ten minutes, we became aware of two helicopters. A few minutes later, an officer in a military Land Rover and two canvas-covered lorries approached us. The officer asked us if we had taken any photographs, to which we replied truthfully in the negative. He informed us that the area and other areas in the locality have been designated military zones where cameras, telescopes and binoculars are not allowed, and that we must leave immediately.

'Having left the area, heading south to the Paphos/Limassol road, we stopped the car to have a drink of water. Within minutes, we were approached by three plain-clothes policemen driving an unmarked car, who subsequently showed us their identity. They had been informed that we had been seen taking photographs and sent for a uniformed armed policeman, this time in a marked car, and then yet another armed policeman and car. After a series of questions, we were asked to proceed in convoy to the police station at Kouklia where, after questioning, the car was searched and the camera taken with an arrangement to collect it the following day.

'On 5th November, I was sea-watching on the Paphos headland when buzzed by a military helicopter at close range, which other visitors found disturbing, although it was clear their perceived problem was my telescope. In view of my recent experiences, I walked quickly into Paphos harbour, where a military lorry was parked, and merged into the crowd unobserved. It is important to point out that the police were courteous towards us at all times. Subsequently, I read (in the May 2005 issue of *SAGA Magazine*, p. 230) that another elderly couple were detained for suspected spying while birding and looking at flowers. They also had their camera confiscated and returned with 35 blank frames; the one shot remaining being of a farmer on his donkey.

'Since the value of 'green tourism' to the Cyprus economy must be not insignificant, these incidents seem a strange and unwelcome development.'

The Eric Hosking Trust

The Eric Hosking Trust is looking for applications for its 2005 bursaries. The aim of the Trust is to sponsor ornithological research through the media of writing, photography, painting or illustration. Bursaries of up to £500 are awarded to suitable candidates once a year, and the closing date for applications is 30th September 2005.

In 2004, the Trust awarded two bursaries. The first was to Greg Conway, at the BTO, towards the cost of his survey on the size and distribution of warbler populations wintering in the UK. The second went to Stoycho Stoychev, at the Bulgarian Society for the Protection of Birds, to fund an educational campaign to help protect the Eastern Imperial Eagle *Aquila heliaca* by raising awareness among the residents of the eagles' main breeding areas.

Details are available from The Eric Hosking Trust, Pages Green House, Wetheringsett, Stowmarket, Suffolk IP14 5QA; tel: (01728) 861113; e-mail: david@hosking-tours.co.uk

A rave from the grave

The detective work carried out by the BOURC in investigating, for example, the Tadcaster rarities makes fascinating reading. Buried in the archives there are further intriguing records still being evaluated long after the event. I [AP] came across one of the more tantalising examples while flicking through the new Dorset avifauna (*The Birds of Dorset*, Christopher Helm, 2004) – the Chinese Yellow Bittern *Ixobrychus sinensis* of 1962.

The corpse of this Oriental heron was found at Radipole on 23rd November 1962, the bird having apparently flown into a concrete post. The dead bird was sent to the British Museum where it was identified as Chinese Yellow Bittern, rather than an aberrant Little Bittern *I. minutus* – and the perceived unlikelihood of it being a wild bird meant that the record was not considered by BOURC at the time. Subsequent European records of Chinese Pond Heron *Ardeola bacchus* in autumn, in Norway (1973), Hungary (2000) and Britain (Norfolk and Hampshire, October and November 2004 respectively), have renewed interest in the earlier record.

And my interest? I have to confess that 23rd November 1962 was the day that I was born, so this record has literally waited a lifetime for a decision (and I gather that a decision is now on the horizon). Do you have a birth-date bird? I'd be interested to hear from you if a significant record coincided with your date of birth.

Of course, 1962 is still fondly remembered for another bird: the Macqueen's Bustard *Chlamydotis macqueenii* that lingered near Minsmere from 25th November to 29th December. If only my parents had had the foresight to take their babe in arms to Suffolk...

Monthly Marathon

Photo no. 214: Dunlin



Volker Konrad

175. Dunlin *Calidris alpina*, Porto Santo, Madeira, October 1989.

Monthly Marathon photo number 214 (*Brit. Birds* 98: plate 87, repeated here as plate 175) is unusual for a MM wader in that we can see some of its head and bill and it is not (thankfully) feeding with its head fully submerged or looking in the opposite direction.

Perhaps the most striking feature of the bird in the photograph is the bill, which appears to be reasonably long, and shows a distinct bulbous droop towards the tip. Taking a step back, we can say that it has dark legs and seems to be a medium-sized wader – it is certainly too large to be a stint. The bird is well lit from the left side, bleaching out that side of the head.

The pale edges to the plain covert feathers, combined with the rather patchy mantle, showing some paler feathers coming through, and most of the lower scapulars already pale grey with dark centres, but with a couple of solid black scapulars left, indicate that it is a juvenile moving into first-winter plumage. What else can we see? Well, looking closely and with the aid of a hand lens, there appears to be some dark flecking on the rear flanks above the left leg and also possibly around the top of the right leg, although it's hard to be sure that this is actually plumage. The crown is finely streaked but very uniform in appearance and, despite the bright sunlight, the rear part of the ear-coverts has a rufous tinge. But still that bill shouts out for attention. And if we turn the lens on that, the bulbous kinked tip begins to look a bit odd and I think there is actually something – water or mud, probably – on the right-hand side of the bill which is accentuating the kinked effect. Nonetheless, it is still a longish bill with a blunt tip.

So how many dark-legged, medium-sized, longish-billed waders, which fall within the remit of this competition, are out there? Thankfully, there are not many, and I think we can come straight down to this being either a Dunlin *Calidris alpina* or a Curlew Sandpiper *C. ferruginea*. That distinctive-looking bill may lead some to believe that it is a Broad-billed Sandpiper *Limicola falcinellus*, but the leg length and colour, together with the plain-looking crown (we would surely see something of the split supercilium at this angle), rule that species out. I think that Curlew Sandpiper would show a much more uniform pattern to the upperparts, whatever plumage it was in, and, even allowing for the fact that the bill may have something adhered to it, would show a finer, tapering bill tip. Consequently, we come back to that benchmark for Calidrid-watchers in western Europe, a Dunlin, perhaps one of the longer-billed eastern or North American races.

Steve Rooke



176. 'Monthly Marathon'. Photo no. 216. Fourteenth stage in thirteenth 'Marathon'. Identify the species. Read the rules (see page 54), then send in your answer on a postcard to Monthly Marathon, c/o The Banks, Mountfield, Robertsbridge, East Sussex TN32 5JY, or by e-mail to editor@britishbirds.co.uk, to arrive by 31st July 2005.

A majority of entrants managed to get this bird identified correctly – but only just: 53% of entries were for Dunlin. A large proportion of the rest – no fewer than 37% of votes – were for Broad-billed Sandpiper. All of which means, in terms

of the present competition, that we now have five contestants in the lead, with a sequence of six correct answers: Mark Edgeller, Jon Holt, Andy Rhodes, Jakob Sunesen and Peter Sunesen.

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We would like to invite photographers to submit high-quality images of potential 'mystery birds' for forthcoming rounds of Monthly Marathon. Digital images are preferred (see below), but we will also accept photographs in traditional format, whether transparencies or prints. It is important that the images provide a challenge which will test our contestants – but it is also critical that they offer sufficient clues for the SUNBIRD solution-writers to work out the birds' identity from first principles – i.e. using only the information available to contestants! The images submitted are reviewed by the team of solution-writers, traditionally at the British Birdwatching Fair in August, who choose images for inclusion in the competition. They do not know the identity of the species at the time, and that is only confirmed once the draft solution is submitted to the Editor.

Please send possible images to the *BB* Editor, Spindrift, Eastshore, Virkie, Shetland ZE3 9JS; e-mail editor@britishbirds.co.uk Digital images should be saved as a high-resolution jpeg, with an image width of 15 cm and at 300 dpi.

Recent reports

Compiled by Barry Nightingale and Anthony McGeehan

This summary of unchecked reports covers mid April to mid May 2005.

Blue-winged Teal *Anas discors* Malltraeth (Anglesey), 16th-24th April; Burnham Norton (Norfolk), 8th May. Lesser Scaup *Aythya affinis* Rutland Water (Leicestershire), 1st-11th May. King Eider *Somateria spectabilis* Barassie/Troon area (Ayrshire), 26th April to 5th May. Barrow's Goldeneye *Bucephala islandica* Meikle Loch and Ythan Estuary (Northeast Scotland), 13th-16th May.

White-billed Diver *Gavia adamsii* Lewis (Western Isles), presumed long-stayer seen again 13th April, with two 16th-23rd, five on 24th April and at least five on 2nd May, with at least one to 11th May; Dungeness (Kent), 28th April; Burghead area (Moray), 3rd and 6th-7th May at least; Eshaness (Shetland), 8th May.

Night Heron *Nycticorax nycticorax* Llandeilo (Carmarthenshire), 14th-15th April; Kuggar (Cornwall), 16th April; Holkham (Norfolk), 15th May. Cattle Egret *Bubulcus ibis* Kingston Seymour, two, 16th April (one presumed long-stayer, one remaining to 20th April); Clonakilty (Co. Cork), 30th April to 5th May. Great White Egret *Ardea alba* Studland (Dorset), 14th April; Farlington (Hampshire), 17th April; Eshaness, 17th April, same Loch of Hillwell (Shetland), 19th April; Saltholme Pools/Cowpen Marsh area (Cleveland), 24th April to 9th May; Minsmere (Suffolk), 4th May; Kiloughter (Co. Wicklow), 15th May. Purple Heron *Ardea purpurea* Manston (Kent), 19th April; Fobbing Marshes (Essex), 2nd May; Cley (Norfolk), 3rd May; Catcott Lows (Somerset), 8th May; North Warren (Suffolk), 8th-15th May; Kenfig (Glamorgan), 14th May. White Stork *Ciconia ciconia* Bridport (Dorset), 19th April; Wetley Rocks (Staffordshire), 20th April; Sutton Mallet (Somerset), 20th April, presumed same at various localities in Somerset on 24th April; Godmanchester (Cambridgeshire), 24th April, perhaps same Coton (Cambridgeshire), 6th May; Spalding (Lincolnshire), 25th April, perhaps same Theddlethorpe (Lincolnshire), 28th April; in Kent, at Grove Ferry 28th April, Reculver 29th April, Elmley Marshes 29th April, Sandwich Bay 30th April, Faversham 30th April, Ashford 1st May, Margate 3rd May, Pegwell Bay 11th May (presumably with some/much duplication); North Kilworth (Leicestershire), 28th April; in East Sussex, at Hailsham 29th April, Bodiam Castle 5th May and Rye Harbour 8th May; Colne Point (Essex), 29th April; Spurn (East Yorkshire), 29th April; Guisborough (Cleveland), 1st May; Winterton (Norfolk), 8th May; Frame Wood, New Forest (Hampshire),



Paul Hackett



Steve Young/Birdwatch

177 & 178. Male Barrow's Goldeneye *Bucephala islandica*, Ythan Estuary, Northeast Scotland, May 2005.

9th May; Stanley Common (West Sussex), 9th May; South Benfleet and Abbot's Hall Farm (both Essex), 15th May; Monknash (Glamorgan), 15th May; Newport (Gwent), 15th May; Lightwater Valley (North Yorkshire), 15th May.

Black Kite *Milvus migrans* Hythe (Kent), 12th April; St Levan (Cornwall), 21st April; Stithians Reservoir (Cornwall), 23rd April; Start Point (Devon), 25th April; Margate, two, 26th April; Great Cornard (Suffolk), 27th April; Hailsham, 27th April; Land's End (Cornwall), 27th April; Mainland (Orkney), 29th April; Loch of Strathbeg (Northeast Scotland), 29th April; The Naze (Essex), 30th April; Abberton Reservoir (Essex), 1st May; Mere Heath (Somerset), 1st May; Stodmarsh (Kent), 2nd May; Rother Valley (South Yorkshire), 2nd May; Dawlish Warren (Devon), 8th May; Thorpe Waterville (Northamptonshire), 11th May. Red-footed Falcon *Falco vespertinus* Winterton, 1st May. Hobby *Falco subbuteo* An influx in early May included 49 at Stodmarsh and 25 at Lakenheath Fen (Norfolk), both on 2nd May.

Black-winged Stilt *Himantopus himantopus* Bowcombe Creek (Devon), 21st April, presumed same Pulborough Brooks (West Sussex), 23rd-25th April and Cuckmere Haven (East Sussex), 1st May; Ouse Washes (Cambridgeshire), 30th April, same Welney (Norfolk), 1st-5th May; Kilkerran Lough (Co. Cork), 1st-7th May; Dungeness, 4th May; Old Hall Marshes (Essex), four, 11th May; Slimbridge and Frampton-on-Severn (Gloucestershire), 12th-15th May; Titchwell (Norfolk), long-stayer present throughout the period. Collared Pratincole *Glareola pratincola* Farlington Marshes, 1st May. Kentish Plover *Charadrius alexandrinus* Breydon Water (Norfolk), 12th-14th April; Dawlish Warren, 13th-16th April; Dungeness, 17th April; Ferrybridge (Dorset), 3rd May; Conwy RSPB reserve (Conwy), 4th May; Holy Island (Northumberland), 14th May. White-rumped Sandpiper *Calidris fuscicollis* Tacumshin (Co. Wexford), 11th May. Stilt Sandpiper *Calidris himantopus* Burnham Norton, 10th-16th May, visiting Titchwell (Norfolk) on 11th May. Broad-billed Sandpiper *Limicola falcinellus* Ballycotton (Co. Cork), 2nd-3rd May; Tacumshin, 6th-8th May; Cliffe (Kent), 14th-15th May. Long-billed Dowitcher *Limnodromus scolopaceus*, North Slob (Co. Wexford), 29th April to 1st May.

Laughing Gull *Larus atricilla* Thorpeness (Suffolk), 5th May. Sabine's Gull *Larus sabini* Carnsore Point (Co. Wexford), 28th April. Bonaparte's Gull *Larus philadelphia* Lough



Sean Cronin

179. Cattle Egret *Bubulcus ibis*, Clonakilty, Co. Cork, May 2005.



Seon Cronin

180. Black-winged Stilt *Himantopus himantopus*, Kilkerran Lough, Co. Cork, May 2005.

Neagh (Co. Armagh), 2nd-8th May; Balranald, North Uist (Western Isles), 10th May. Gull-billed Tern *Sterna nilotica* Dungeness, 4th-15th May; Rye Harbour, 7th-8th May. Elegant Tern *Sterna elegans* Christchurch Harbour (Dorset), 10th May. Whiskered Tern *Chlidonias hybrida* Hockwold Washes (Norfolk/Cambridgeshire), 2nd May; Tacumshin, 6th-7th May; Exmouth (Devon), 9th May. White-winged Black Tern *Chlidonias leucopterus* Blickling Hall Lake (Norfolk), 8th May; Cotswold Water Park (Gloucestershire), 14th May.

Snowy Owl *Bubo scandiacus* Balranald, 26th April to 1st May; Lewis, 28th-29th April; Hermaness, Unst (Shetland), 4th-10th May. Alpine Swift *Apus melba* Walton Reservoir (Surrey), 30th April; Durlston (Dorset), 3rd May. European Bee-eater *Merops apiaster* Porthtowan (Cornwall), two, 1st-4th May; Church Cove (Cornwall), four, 6th May; Dunwich (Suffolk), seven, 15th May.

Short-toed Lark *Calandrella brachydactyla* St Martin's (Scilly), 29th April; St Mary's (Scilly), 1st May. Red-rumped Swallow *Hirundo daurica* Corsham Lake (Wiltshire), 25th April; Spurn, 27th April and 1st-2nd May; Hengistbury Head (Dorset), 30th April; Kenidjack (Cornwall), 1st May; Gibraltar Point (Lincolnshire), 1st May; Blacktoft Sands (East Yorkshire), 4th May; Nare Head (Cornwall), 7th May. Tawny Pipit *Anthus campestris* St Agnes (Scilly), 24th April. Red-throated Pipit *Anthus cervinus* Holkham (Norfolk), 25th April. Citrine Wagtail *Motacilla citreola* Fair Isle (Shetland), 29th April to 2nd May; Bryher (Scilly), 30th April.

Siberian Rubythroat *Luscinia calliope* One reported on a boat, c. 175 km east of Aberdeen (Northeast Scotland), 12th May. Rock Thrush *Monticola saxatilis* Truro (Cornwall), 1st May. White's Thrush *Zoothera dauma* Wester Quarff (Shetland), 28th April.

Great Reed Warbler *Acrocephalus arundinaceus* Frensham Great Pond (Surrey), 30th April; Brandon Marshes (Warwickshire), 6th-9th May; Fair Isle, 13th May; Willington Gravel-pits (Bedfordshire), 15th-16th May. Subalpine Warbler *Sylvia cantillans* South Ronaldsay (Orkney), 20th-25th April; Beachy Head (East Sussex), 30th April; Spurn, 1st May; Dungeness, 1st-2nd May.



Deryk Shaw

181. Red-necked Phalarope *Phalaropus lobatus*, Fair Isle, Shetland, May 2005.

Short-toed Treecreeper *Certhia brachydactyla* St Margaret's-at-Cliffe (Kent), 30th April; Dungeness, 2nd and 8th May. Woodchat Shrike *Lanius senator* Nanquidno Valley (Cornwall), 29th April to 7th May; Start Point (Devon), 29th April to 2nd May; St Mary's, 30th April to 4th May; Saltee Islands (Co. Wexford), 1st-4th and 10th May; Portland (Dorset), 2nd May; Barnes Wetlands Centre (London), 3rd May; Church Cove (Cornwall), 4th May; Burnham Norton, 14th-15th May.



Ian Butler

182. Hoopoe *Upupa epops*, Much Wenlock, Shropshire, May 2005.

European Serin *Serinus serinus* Portland, 15th April; Christchurch, 23rd April; St Mary's, 23rd-27th April; Rye Harbour, 24th April; Hayling Island (Hampshire), 25th April; Lundy (Devon), two, 26th April; Spurn, 29th April and 15th May; Dungeness, 29th April; Southwell (Dorset), 6th May. Dark-eyed Junco *Junco hyemalis* One aboard an oil platform, c. 200 km east of Aberdeen, 13th-16th May. Rustic Bunting *Emberiza rustica* Fair Isle, 8th May.



Deryk Shaw

183. Great Reed Warbler *Acrocephalus arundinaceus*, Fair Isle, Shetland, May 2005.



Simon Stirrup

184. Female Woodchat Shrike *Lanius senator*, Burnham Norton, Norfolk, May 2005.

Rarities Committee news

BBRC dumps Black Brant

At its 2005 AGM, the British Birds Rarities Committee agreed to withdraw 'Black Brant' *Branta bernicla nigricans* from the list of rare species and races that it considers, with effect from 1st July 2005.

BBRC believes that, while Black Brant is still undoubtedly a rare bird, the number of returning individuals has increased observer familiarity with this form. In addition, the fact that many of these individuals join wide-ranging flocks of Brent Geese, which move among different localities and across county boundaries, has led to real problems in our assessment of the numbers involved, and of which records are attributable to which individual. Consequently, we now have relatively little confidence in our ability to gauge the *number* of individuals present in each year accurately. We are also aware that we do not receive full details from all counties, and the confusion with numbers may be one of the key issues here. We feel that county and local records committees, being closer to the ground, are best placed to decide how many and which individuals are involved in any given set of records.

BBRC now considers that the status of Black Brant, as a scarce but regular rare winter visitor to Britain, is now well understood and, given the above uncertainties, that there is little benefit in the Committee continuing to assess them. We hope that county and local records committees will continue the BBRC policy of accepting only those records with detailed descriptions of individuals which display a full suite of characters (see *Brit. Birds* 95: 129-136), as the problem of intergrades appears to be slowly increasing. A detailed species comment will appear in the 2004 BBRC report.

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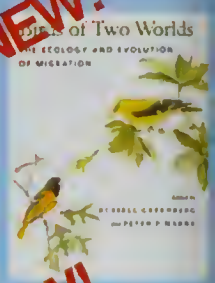
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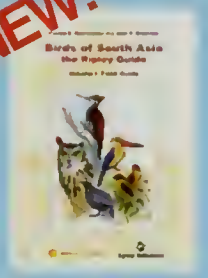
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